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THE
Country Builder's Eſtimator:
Or the ARCHITECT'S
COMPANION,
For ESTIMATING of
New Buildings, or Repairing of Old;

IN A CONCISE AND EASY METHOD,
ENTIRELY NEW,

And of Uſe to GENTLEMEN or their STEWARDS, MASTER-WORKMEN, ARTIFICERS, or any Perſon that undertakes or lets out WORK.

WHEREIN

The ſeveral Artificers Works concerned in Building, and every Article belonging to each of them are fully, diſtinctly, and ſeparately conſidered, and the PRICES thereof inſerted, not only of the Workmanſhip, but of the Materials alſo, and what Quantity of Materials are required to the Performance thereof; with the Manner of taking Dimenſions, Meaſuring and Valuing the ſame.

ALSO,

A New Method to ſhew what LIGHT is proper for any ROOM, and the PROPORTION that the WINDOWS, CHIMNIES, and FUNNELS, ought to have, by a UNIVERSAL RULE.

To which is added,

Several NEW TABLES, (never before publiſhed) for the Valuing of OAK, or any other TIMBER that is ſquared and cut to any Scantling or Size fit for Building.

By WILLIAM SALMON, jun.
Of COLCHESTER in ESSEX.

THE EIGHTH EDITION.
Carefully Reviſed and Corrected, with many large Additions and Alterations interſperſed throughout the WHOLE.

By JOHN GREEN, Architect, in SALISBURY.

LONDON:
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BRITISH MUSEUM

THE

PREFACE.

IT would be as unneceſſary to expatiate on the Uſefulneſs of this TRACT, as to make Apologies for compoſing it; for the Advantages which will inevitably accrue to all thoſe who are concerned in BUILDING, will manifeſtly appear at the firſt Inſpection.

Therefore this Subject wants no florid Pen to ſet it forth, or the alluring Charms of Rhetorick to recommend it; for which Reaſon I ſhall leave the Reader to determine of its MERIT, by the plain, naked, and undeniable *Facts* and Obſervations, he will meet in the *Work*; for, if the *Book* cannot be ſupported by that, an Encomium on the

A 2

Subject will but render it the more ridiculous and contemptible.

Therefore all that I ſhall, or need to ſay, is, That I have endeavoured as much as was in my Power, to be as correct as poſſible in what I have advanced with Reſpect to the *Prices* of *Work*, ſo as neither to ſet down more or leſs than what is uſual, and what it is really worth between Man and Man; for were I to do otherwiſe, let the Exceſs be on either Side, it would be more deſtructive to my own Intereſt than to that of the Public, as I could eaſily prove, were it either neceſſary or material ſo to do.

The greateſt Part of the *Prices* here inſerted, are what I have from Time to Time, for ſeveral Years paſt, collected from my own Obſervations and daily Experience in Practice, and from Converſation with, and enquiring of other Workmen of known *Abilities* about ſuch Things as I was not ſo well acquainted with, and theſe *Prices* are ſuch as do generally agree with the cuſtomary ones here and at *London*.

But here it may be objected, that as the Prices of Work in different Parts of this Kingdom are not the ſame, it cannot be ſo univerſally uſeful as otherwiſe it would.

To which I anſwer, That if I were to be rightly informed of the different *Prices* of Work, of every Town and County in *England*, I ſhould have forbore to inſert them, becauſe it would be apt to breed Confuſion, and thereby fruſtrate that Deſign of its being a uſeful Companion to my own Countrymen, but as I have ſhewn what Quantity of Materials is required for the accompliſhing of one *Yard, one Square, one Rod, &c.* of ſuch Sorts of Work as are done by thoſe Meaſures, it cannot fail, nor be denied, but that it muſt in the general be of Uſe throughout the whole Kingdom.

To conclude, I hope this ſmall Treatiſe will be a Means of promoting diſtributive Juſtice to all Men, in ſuch Things as relate to a BUILDING, whereby both *Maſters* and *Workmen* ſhall have what is right and equitable between them; and as well prevent *Gentlemen* from being impoſed upon by fraudulent crafty *Workmen*, as ignorant *Workmen* from taking their Work at too low a Price, which oftentimes proves of dangerous Conſequence to them, (viz. the *Ruin of themſelves and their Families)* and that purely by Means of unadviſed Contracts.

I could proceed to ſhew, that for *Gentlemen* or *Workmen* to be kept in Ignorance of the Value or Prices of Work, is deſtructive to the Trade in general, but, as this is not material, I ſhall conclude, with wiſhing it may prove as univerſally uſeful as intended,

By Yours, &c.

WILLIAM SALMON, *jun.*

THE

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THE

THE

BUILDER's COMPANION.

SECT. I.

Of the Prices of ſuch Materials as are required in BUILDING.

I SHALL, in this Section, ſet down the general *Prices* of all, or moſt of the principal Materials required in Building, as a Foundation for the enſuing Work; but firſt I would have the Reader obſerve, that the *Carriage* of all *Materials* is excepted; therefore, whenever you make Uſe of this Treatiſe to eſtimate a Building, or any Part thereof, the Charge of carrying the Materials to the Work muſt be enquired into, and added to the Eſtimation, for to find out the exact Charge of the Whole.

Therefore to proceed to what I firſt propoſed, viz. *the Price of the Materials.*

	£.	*s.*	*d.*
BRICKS per Thouſand from 20s to	1	5	0
Cutting *Bricks* for rubbed and gauged Work at per Thouſand, from 2l to — —	2	10	0
Plain Tiles per Thouſ. fr. 18s. to	1	1	0
Pan-Tiles per Hund. from 7s to	0	8	0
Dutch glaz'd *Pan-Tiles* per Hund.	0	10	0
Gutter Tiles per Hund. from 12s to	0	16	0
Lime per Buſhel, from 6d to	0	0	8
Lime per Load, 23 Buſh. fr. 11s 6d to	0	15	7
Sand per Load, 36 Buſhels —	0	3	0
Hair per Buſhel, from 5d to —	0	0	7
Flemiſh Bricks per Hundred —	0	2	0
Nine-inch *Paving-Tiles* per Hund. from 7s to — —	0	8	0
Pebbles at per Ton, from 16s to	1	0	0
Gravel at per Load —	0	3	0
Rags at per Ton —	0	10	6
Flanders Bricks at per Thouſand	1	0	0

	£.	*s.*	*d.*
Oak Timber cut to Scantlings fit for *Building*, according to the Goodneſs of the Stuff, from 2s per Foot Cube, to ——	0	2	6
Fir Timber cut to Scantlings fit for Building, from 1s 8d per Foot Cube, to —— ——	0	1	10
Deal Tile-pins, per Buſhel —	0	3	0
Oak ditto —— ——	0	4	0
Portland Stone in Blocks, per Foot	0	2	3
Ditto Slabs, Inch and Half thick,	0	1	6
Purbeck Stone Slabs, poliſh'd —		2	0
Purbeck Paving at promiſcuous Sizes only hew'd and ſquar'd, is per Foot about ——	0	0	9
Mitchels are valued per Foot at about	0	1	10
Free-Stone per Foot, ſquar'd for *Paving*, from 1s to ——	0	1	2
Ditto ſquar'd and poliſh'd, fr. 15d to	0	1	4
Four Foot and a Half *Spine Laths* from 2s 6d per Bundle to —	0	2	8
Sap Laths per Bundle ——	0	1	6
Deal Laths per Bundle from 1s 6d to	0	1	8
Thatching Laths of Oak per Bundle 2s or —— ——	0	2	6

	£.	s.	d.
The Prices of Four Feet and a Half Laths, or Four Feet, or Three Feet Laths, are the ſame, for what is wanting in Length is made good in the Tale of each Bundle.			
Five Foot *Cleft Pale* per Hund. from 14s to —— ——	0	15	0
Four Foot *Pale* per Hun. from 12s to	0	13	0
Eaves Boards per ft. run^{g}. Mea. 1d. ½			
Lead per Hund. from 18s to —	1	0	0

SECT. II.

Of CARPENTER's *Work.*

THE Work done by *Carpenters* are, chiefly, Framing of Houſes, Bridges, Barns, Stables, Floors, Partitions, Roofs, &c. Making of Doors, Windows, Stair-Caſes, Corniſhes, Frontiſpieces, Modillion-Corniſhes, Cove-Eaves, and all Sorts of boarded Floors; alſo Weather-boarding, and Fencing of all Sorts.

In ſpeaking of which, I ſhall make each Article a diſtinct Head by itſelf, and keep to that Order throughout the whole Book, it being, in my Opinion, the beſt Way of proceeding, to avoid Confuſion, and the more eaſily referred to upon Occaſion.

I ſhall likewiſe, under each Head, treat of the cuſtomary Way of taking Dimenſions, and meaſuring each Artificer's Work employed in Building.

ARTICLE I:

Of Framing the Outſide Carcaſe of a Houſe.

FIRST, *of the* MEASURING.

THE Outſide Carcaſe of a Houſe, as alſo Floors, Partitions, Roofs, Barns, and Stables, are meaſured by the Square, containing 100 ſuperficial Feet, or 10 Foot every Way; by the ſame Method, Flooring, Tileing, Thatching, and Weather-boarding, are alſo meaſured.

To meaſure the Body of a Timber Building.

Take the Length of one Side and one End, and add them together, and their Sum multiply'd into the Height, (taken from the Underſide of the Cell to the Upſide of the Raiſing) gives the Content of one Side and one End, which being doubled, is the Content of the whole Body, or outſide Carcaſe of the Building, in Feet.

To bring the Content found into Squares, divide the Product by 100, or cut off from the Product two Figures towards the Right Hand, and the remaining Figures are ſo many Squares, and the Figures cut off are Feet.

The PRICE.

	£.	s.	d.
To Framing the outſide Carcaſe, hewing and ſawing included, from Ten Shillings and Sixpence per Square to — —	0	12	0
Labour only, from 6s per Square to	0	7	0
If with old Timber, made ſtraight on both Sides, 8s per Square, or	0	8	6
Ditto for Workmanſhip and all Materials of new *Oak* per Square	2	6	0
If of *Fir* per Square —	1	15	0

N. B. The Studs or Quarters to ſtand twelve Inches aſunder.

The Scantlings and Price of new Oak, according to this Computation, is as follows:

Cells and Overways 7 by 6, at 7d. Poſts 6 by 8, at 8d. Raiſings 8 by 5, at 6d. ½, Studs 3 by 4, at 2d. per Foot.

The Price of Oak Timber is from 2s. to 2s. 4d. per Foot Cube cut into Scantlings.

Fir 20d. per Foot Cube to 1s 10d. per Foot Cube.

Note, If you would know the Value of a Square of Carcaſeing with Oak Timber cut to any larger Scantling than what is abovementioned, you muſt conſider how many Feet of Timber is wanting of each Scantling, and ſeek the Value thereof at per Foot by the fourth Table at the latter End of this Treatiſe, and caſt up how much ſuch a Number of Feet comes to at ſuch a Price per Foot of each of the Scantlings required, and ſee what they will amount to; then conſider how many Square is contained in the Work, and to the Prices of the Timber add ſo many Square of Framing at ſo much per Square for the Labour; conſider alſo how many Nails are wanting, if you are to find them; and, laſtly, what the Whole amounts to, and divide that Sum by the Number of Squares contained in the Work, and the Quotient is the Price per Square ſought for.

To a Square of Framing, there may be allowed twenty Foot of rough Timber, which is a ſufficient Quantity for common Buildings.

ARTI-

ARTICLE II.

Of Framed Floors.

THE Particulars to be obſerved in meaſuring of Floors that are framed, are,

Firſt, They are meaſured by the Square [as is taught under the preceding Article.]

Secondly, In taking Dimenſions thereof, you allow for the Length of the Joiſt laid into the Wall.

The PRICE.

1. To Framing of Floors, Girders 10 by 12 Inches, Joiſt 3 by 5, ſingle Framing of Oak Timber, finding all Materials and Labour, 2l. 5s. per Square.

2. If done with Fir, 1l. 14s. per Square; Labour only 7s. or 7s. 6d. per Square.

The Scantling and Price of the Timber, according to this Computation, is as followeth:

1. Girders and Joiſt, 2s. per Foot Cube.

2. The Girders, 10 by 12 Inches, at 1s. 8d. per Foot.

3. The Joiſt, 4 and an ½ by 3 and an ½ at 2d. ¾ per Foot.

If you would have the Timbers cut to a large Scantling, to find the Value of a Square thereof, obſerve the Directions noted under *Article* I.

4. Aſhlering or Cieling Floors, Stuff 3 by 4, at 16s. per Square.

5. *Note,* The Joiſts to be laid about 12 Inches aſunder.

6. If the Girder be 11 by 13 Inches ſquare, and the Joiſt be 7 by 4, or if the whole Depth of the Girder, it is worth, of Oak, 3l. 3s. per Square, and of Fir, 2l. 5s per Square.

7. There is about 20 or 22 Foot of rough Timber to the Square.

8. To more ſubſtantial Framing of Floors of Oak Timber, framed with Binding and Bridging Joiſt, the Girder 11 Inches by 13 Inches, Binding Joiſt 7 Inches by 4 Inches, Bridging Joiſt 3 Inches by 4 Inches, Workmanſhip and all Materials, 3l. per Square of Oak; if with Fir Timber, 2l. 5s. per Square.

9. Labour only of Oak 10s. of Deal 8s. per Square.

10. If the Girders are truſſed, 6d. per Foot running Meaſure.

11. Cieling Floors and Aſhlering, Labour and all Materials, 16s. per Square.

12. To Framing of Floors with Cofer Joiſt, the Girders 11 Inches by 12 Inches, the Joiſt 12 Inches by 2 ½ Inches of Oak Timber, Work and all Materials, 3l. 6s. or 3l. 8s. per Square. If with Fir, 2l. 12s. per Square.

Note, The Sawing included in the Price of the Materials.

ARTICLE III.

Of Framed Partitions, &c.

THE Particulars to be obſerved in meaſuring Partitions, (beſides that of being meaſured by the Square) is, that you deduct the Doors and Windows contained therein, except they are agreed to be included.

The PRICE.

1. For Framing Partitions, the Scantling Quarters 3 by 4 Inches, Cells 4 by 5 Inches, Poſts 4 by 7 or 8 Inches, Partition Head 4 by 6 Inches, Workmanſhip and all Materials, 1l. 10s per Square, if Oak Timber; if Fir Timber, 1l. 2s. 6d. per Square.

2. The Sawing included in the Price of the Scantling as before.

3. Labour only 5 or 6s. per Square.

Boarded

Boarded Partitions, Materials, and Labour.

1. BOARDED Partitions, with rough ſlit Deal, at 2d. ¼ per Foot.

2. Whole Deal, plained on one Side, at 4d.½ per Foot.

3. Ditto plained on both Sides, at 5d. ½ per Foot.

4. Ditto grooved, tongued, ledged, or batten'd, at 7d. ½ per Foot.

5. Two-inch Deal, plained on one Side, at 7d. per Foot.

6. Ditto, plained on both Sides, at 8d. per Foot.

7. Ditto grooved, tongued, ledged, or batten'd, at 9d. per Foot.

ARTICLE IV.

Of Framing of Roofs.

WHEN you take the Dimenſions of a Roof, meaſure the Length and Breadth of the *Building* to the utmoſt Extent of the Walls, and adding that Product, half as much more will be the *Content*, provided it be made to what is commonly called *true Pitch*, when the Length of the Rafter is 3-4ths of the Span or Breadth of the *Build-*

Building; but if the *Pitch* or Slope be different, you muſt multiply the Length of the Rafter by the Length of the Front, and twice that Product is the Content.

And this RULE will be general for all *Roofs* whatſoever; for let them have either *Gable Ends*, or *Hip Ends*, the Meaſure will be the ſame, as is more clearly demonſtrated at the End of this Section.

The PRICE.

1. For Framing Purline Roofs, including hewing and ſawing the Stuff, from 10s. to 12s. per Square; excluſive of hewing and ſawing, from 5s. to 6s. per Square.

2. Finding all Materials of Oak, including Plates and Labour, 1l. 10s. per Square.

3. If Fir, including Plates, 1l. 2s. 6d. per Square.

4. The Scantling of the Rafters, according to this Computation, is 3 by 4; their Diſtance 12 Inches, and the Plates are Four by Six.

5. Girt Roofs to frame, Workmanſhip only, from 6s. to 7s. per Square.

6. To hew and ſaw all the Stuff, from 12s. to 14s. per Square.

7. To Materials and Labour, of Oak, including Plates, from 2l. 2s. to 2l. 4s. per Square.

8. Ditto of Fir Timber, from 1l. 10s. 6d. to 1l. 13s. per Square.

The Scantling of the Stuff, according to this Computation, is thus:

Principal Rafters 7 by 8 in the Middle, ſmall Rafters 3 by 4, Purlines 6 by 6, Collar Beams 5 by 7, Plates 4 by 7.

9. Rafters, Feet, and Eave-Boards, 4d. per Foot.

ARTICLE V.

Of Framing Barns.

TO meaſure the Carcaſe of a Barn, is the ſame as to meaſure the Carcaſe of a Houſe, therefore needs not to be repeated. See *Article* I.

The PRICE.

1. The Price of framing the Carcaſe of a Barn, Workmanſhip only, from 5s. to 6s. hewing and ſawing all the Timber, from 10s. to 12s. per Square.

2. Workmanſhip and all Materials, of Oak, at 1l. 15s. per Square.

3. Ditto of Fir, 1l. 6s.

4. One Load of rough Timber will be about two Squares and a Half.

ARTICLE VI.

Of Framing Stables.

THE Method of taking Dimenſions, and meaſuring of Stables, is alſo the ſame as to meaſure the Carcaſe of a Houſe, therefore I need only refer you to the *firſt Article* of this Section.

The PRICE.

1. For Framing the Carcaſe of a Stable, Workmanſhip only, from 5s. to 6s. hewing and ſawing included, from 10s. to 12s. per Square.

2. Workmanſhip and all Materials, of Oak, 1l. 16s.

3. If of Fir, 1l. 8s.

N. B. Leſt the Scantlings of the Timber, by which this Eſtimation is made, ſhould not be the ſame as your preſent Purpoſe requires, it would therefore be the ſafeſt Way to obſerve the Directions given under *Article* I.

A TABLE,

Shewing what are the proper Scantlings to cut Timber for the Accompliſhment of any Building.

I. GIRDERS.

Length Feet.	*Scantling Inches.*
10	8 and 10
12	8½ and 10
14	9 and 10½
16	9½ and 10½
18	10 and 11
20	11 and 12
22	11½ and 13
24	12 and 14

II. TRIMING JOISTS.

Feet.	*Inches.*
5	3 and 7
6	4 and 7
7	5 and 8
8	4 and 8
9	5 and 8
10	6 and 9

III. *Of* JOISTS.

Length Feet.	*Scantling Inches.*
6	7 and 2½
8	7 and 3
10	8 and 3
11	9 and 4

IV. BEAMS.

Feet.	*Inches.*
12	6 and 8
16	6½ and 8½
20	6½ and 9
24	7 and 9
28	7½ and 9½
32	8 and 10
36	8½ and 10½
40	8½ and 11
44	9 and 12

5 *Principal Rafters,*

From 12 to 14 Feet, muſt be 8 Inches at Bottom, 5 at Top, and 6 thick.

From 14 to 18 Feet, 9 Inches at Bottom, 7 at Top, and 7 thick.

From 18 to 21 Feet, 10 Inches at Bottom, 8 at Top, and 8 thick.

From 21 to 24 Feet, 12 Inches at Bottom, 9 at Top, and 8½ thick.

From 24 to 26 Feet, 13 Inches at Bottom, 9 at Top, and 9 thick.

Single Rafters,

Muſt have in their Squares from 4 by 3 to 5 by 4.

Purlines muſt be cut to a Scantling, from 9 by 8, to 9 by 12, for large Buildings; but for common ſmall Buildings, from 4 by 5, to 5 by 6.

Raiſing Plates, from 9 by 6, to 8 by 5.

Principal Poſts, from 10 by 8, to 9 by 7, at Bottom; and to diminiſh upwards at Diſcretion according to their Length.

Sills and Overways, from 9 by 8, to 7 by 9.

The Prices at per Foot, to any of the above-mentioned Scantlings, are to be found, if of Oak, in the fourth Table, at the latter

End hereof; and if the Stuff be extraordinary good, without Sap, and large Scantlings, it may be valued at double the Price of the firſt Table; if Fir, value it by the ſecond Table.

ARTICLE VII.

Of Boarded Floors.

BOARDED Floors are meaſured by the Square, and the Particulars to be obſerved in taking Dimenſions, are, that you take the Dimenſions to the very extreme Parts, out of which you muſt deduct Stair-Caſes, Chimnies, &c.

The PRICE.

1. Rough whole Deal, clear of Sap, the Workmanſhip 3s. 6d. per Square.

Finding all Materials 1l. 15s. per Square.

2. Ditto, liſted and ſhot, clear of Sap, 1l. 17s. per Square.

Workmanſhip only 4s. per Square.

3. Folded Joint-Boarding, clear of Sap, 2l. 2s. per Square.

Labour only, 5s. 6d. per Square.

4. Common ſtraight Joint-Boarding, clear of Sap, 2l. 7s. per Square.

Labour only 7s. 6d. per Square.

5. Second-beſt Boarding, nailed, clear of Sap, 2l. 12s. 6d. per Square.

Labour only, 8s. 6d. per Square.

6. Ditto dowelled, 3l. 3s. per Square.

Workmanſhip only, 14s. or 15s. per Square.

7. Clean Deal dowelled 4l. 15s. per Square.

Labour only 18s. per Square.

8. Ditto long Boards clean dowelled, 5l. 15s. or 6l. per Square, according to the Length.

Labour only, 1l. 1s. per Square.

9. If it be for a common Ground Floor, and you find Joiſts and lay them, and account the Joiſts at 2d. per Foot, and 13s per Square to the Prices above exhibited, if the Joiſts be worth 2d. ½ per Foot, add 16s. per Square to the above Prices; and if they be worth 3d. per Foot, add 19s. but if you do not find the Joiſts, but only have to lay them, then add for laying them, from 1s. to 2s. per Square more to the Prices above.

Of Barn Floors.

TO lay Barn Floors with 2-Inch Oak Plank, Joiſts 4 by 5, finding all Materials and Labour, 3l. 15s. or 4l. per Square, according to the Goodneſs of the Materials.

Two-Inch Plank 4d. ½ or 5d. per Foot, Joiſts 5 by 4 at 3d. ½, ſawing included in the Price of the Materials; Workmanſhip 6s. 6d. or 7s. per Square.

To lay a Barn Floor with 2-Inch Deal, liſted, clear of Sap, 3l. 10s. per Square; Workmanſhip 7s. per Square.

If with 3-Inch yellow Deal, 4l. 10s. per Square; Workmanſhip only 7s. 6d. per Square.

Note, The Joiſts are computed to be laid 12 Inches aſunder.

ARTICLE VIII.

Of Windows.

WINDOWS are generally made and valued by the Foot, ſuperficial Meaſure, and ſometimes by the Window; and when they are meaſured, the Dimenſions muſt be taken from the underſide of the Cap-piece for the Height, and for the Breadth, from Outſide to Outſide of the Jaumbs; and the Product of their Multiplication is the ſuperficial Content.

Saſhes and Frames are meaſured from the outſide of the Frames, both in Height and Width; the Height multiplied by the Width gives the Contents both of the Frames and Saſhes together.

The PRICE.

1 For making a Saſh Frame, with the outſide Linings and Sills of Oak, Pulley-pieces and inſide Lining of Yellow Deal, 1s. 6d. or 1s. 8d. per Foot; Workmanſhip 5d. ½ or 6d. per Foot.

2. Saſhes only, excluſive of Frames, Inch and Half Deal, 8d. per Foot; Workmanſhip 3d. per Foot. If made of Oak, 10d. or 11d. per Foot; Workmanſhip 4d. per Foot.

3. Aſtragal Saſhes and Frames included, all of Oak, 2-Inch Stuff for the Saſhes, at 2s. 3d. per Foot; Workmanſhip only 7d. per Foot.

4. Girt and Lutheran Windows of Oak, 3 by 4. 6d per Foot; of Deal 4d. Labour from 2d to 2d. ½ per Foot.

5. Caſeing of Windows from 2s. to 2s. 6d. per Window; Workmanſhip from 9d. to 1s. 3d. per Window.

ARTICLE. IX.

Of Stair-Caſes.

STAIR-CASES are meaſured by the Foot ſuperficial, and the Dimenſions are taken with a String, girt over the Rainer and Tread; and that Length or Girt multiplied by the Length of the Step, the Product is the ſuperficial Content.

The PRICE.

1. Steps and Riſers of common Stairs, made of Oak-board, String-board, Bearers included, 9d. or 10d. per Foot; Labour only 3d. per Foot.

2. Ditto of Fir 8d. per Foot; Labour 2d. ½ per Foot.

3. Ditto of ſecond-beſt Boards, Strings, Bearers, and plain Brackets, included, 10d. or 12d. per Foot; Labour 3d. ½ per Foot; excluſive of Rails and Balluſters.

4. Ditto with clean Deal, 1s. 6d. per Foot; Workmanſhip only, 7d. per Foot; excluſive of Rails and Balluſters.

5. Rails and turned Balluſters, the Rails ſtrait, with Mouldings to ditto on each Side, and capping of the Rails, the Balluſters two Inches Square made of Yellow Deal, 2s. 6d per Foot running; if the Balluſters are Two-Inch and an Half Deal, 3s. per Foot.

6. If the Rails of Oak and Balluſters, of 2-Inch Oak, 3s. 6d. per Foot running Meaſure; the circular Part meaſured double.

7. If the Steps, Quarter-Paces, String-Boards, &c. are made of right Wainſcot, Work and all Materials 1s. 8d. per Foot, excluſive of Rails and Balluſters.

8. Newel, turned and capp'd, 3s. 6d. per Foot running, if fluted paid extra.

9. Framed Quarter paces, naked framing, 9d. per Foot; Labour only 3d. per Foot.

10. Leading Pieces or Sleepers, Materials and Labour to ditto of Oak, 2s. 4d. per Foot Cube.

11. Carved Brackets, from 1s. 6d. to 2s. per Bracket.

12. If Stair-Caſes are wainſcoted with Inch and Quarter Deal, and framed with 3-quarter Pannels of Yellow Deal, excluſive of Capping and Baſe, 4s. 6d. or 5s per Yard; Labour only 2s. 3d. per Yard.

13. Capping and Baſe are meaſured by the Foot ſuperficial; Work and Labour 1s. per Foot; Labour only 6d. per Foot; if done with Norway Oak, 7s. 6d. or 8s. per Yard; if with Pilaſter oppoſite the Newel, plain or fluted, muſt be paid for extra by the Foot ſuperficial; if with Capping, with the moulding of the Hand-Rail and Baſe to ditto, muſt be paid for by the Foot as above.

ARTICLE X.

Of Doors and Door-Caſes.

1. DOORS are always meaſured by the Foot ſuperficial; two-pannel Doors, made of One-Inch and Half Yellow Deal for the Framing, 3-quarter Deal for the Pannels, ovolo and raiſed Pannels on one Side, flat Pannels on the other Side, 7d. per Foot; Labour 2d. ½ per Foot, excluſive of Jaumbs and Linings.

2. If four Pannels, of Inch and Half Deal, and 3-quarter Pannels, ovolo and raiſed Pannels on one Side, 9d. or 10d. per Foot; Labour only 3d. ½ per Foot.

3. Four-pannel Doors, made of 2-Inch Deal, ovello and raiſed Pannels on one Side,

ovolo and flat Pannels on the other; Pannels of Inch Stuff, 1s. 2d. per Foot; Labour only 5d. ½ per Foot.

5. Six-pannel Doors of 2-Inch and Half Yellow Deal, ovolo and flat Pannels on one Side, ovolo and raiſed Pannels on the other Side, Inch and Quarter Deal for the Pannels, 1s. 6d. per Foot; Workmanſhip only 7d. per Foot.

6. Eight-pannel Doors of 2-Inch and Half Deal, Inch and Quarter Stuff for Pannels, full Work on the one Side, ovolo and flat Pannels on the other Side, 1s. 8d. or 1s. 10d. per Foot; Workmanſhip 7d. ½ or 8d. per Foot.

N. B. The above Article is excluſive of hanging the Doors.

Of Framed Door-Caſes.

Framed Door-Caſes are worth 3s. 6d. per Foot Cube, including Labour and all Materials; if made of Deal 2s. 8d. Labour only 2d. per Foot ſuperficial.

The Stuff muſt be valued according to the Scantling, as ſet down in the fourth Table at the latter End of this Book.

ARTICLE XI.

Of Modillion Corniſhes, Cove-Eaves, &c.

MODILLION Corniſhes, Cove-Eaves, and Dentil Corniſhes, are generally meaſured and valued by the Foot ſuperficial.

The PRICE.

1. Plain Outſide Corniſhes, out of whole Deal, 1s. per Foot; Labour only 6d. per Foot.

2. Modillion or Dentil, 1s. 6d. per Foot; Workmanſhip 9d. per Foot ſuperficial; Block Cornices the ſame.

N. B. Under theſe two Heads are comprehended the Prices of any Sort of Corniſh Eaves, wrought according to any of the five Orders of Architecture; Carving and Scaffolding only excepted.

3. Cove-Eaves, with a Bed-moulding, Facio, and Corniſh, at 1s. per Foot ſuperficial; Workmanſhip of Carpenters Work only, 6d. per Foot.

4. Guttering and Bearers of Oak, 8d. per Foot; of Fir, 6d. per Foot ſuperficial.

5. Square Trunks, made to bring down the Water from off the Top of the Houſe,

of Oak, 10d. per Foot; of Fir, 8d. per Foot lineal Meaſure.

ARTICLE XII.

Of Weather-Boarding.

WEATHER-BOARDING is done by the Yard ſquare, and ſometimes by the Square of 100 ſuperficial Feet.

The PRICE.

1. Weather-Boarding with Feather-edg'd Deal, 1l. 1s. per Square; Labour to ditto 3s. 6d. per Square.

2. Ditto, neither plained nor beaded, 18s. per Square; Labour 2s. 6d. per Square.

3. Ditto with Oak, plained and beaded, 1l. 6s. per Square; Labour only 4s. per Square.

Here follows a Table, which ſhews how many Boards 10 Foot long, at 5 ſeveral Gauges, will compleat a Square.

The TABLE.

			Boards.		Inches over.
At a	9	Inch Gauge.	13	and	3
	8		15		0
	7		17		1
	6		20		0
	5		24		0

ARTICLE XIII.

Of Frontiſpieces.

FRONTISPIECES are meaſured and valued by the Foot ſuperficial, viz. the Architrave Frieze and Cornice, likewiſe the Baſe and Capital, each by themſelves, girt over the Moulding with a String, and the Girth of each Article multiplied by the Length, gives the Content of each Part. Laſtly, take the Height of the Shaft of the Column or Pilaſter and girt round the Middle, between Cap and Baſe, which when multiplied by the Height will give the Contents, and every Article added together will give the Contents of the Whole.

The PRICE.

1. A Frontiſpiece, according to the *Tuſcan* Order, made of *Norway* Oak, 1s. 8d. per Foot; Labour only 9d. or 10d. per Foot.

2. If made of Deal, 1s. 2d. or 1s. 3d. per Foot; Labour only, 7d. per Foot.

3. If of the *Dorick*, *Ionick*, *Corinthian*, or *Compoſite* Order, 1s. 10d. or 2s. per Foot, made of *Norway* Oak; Labour only 10d. per Foot.

4. If either of the Orders are made of Deal, 1s. 6d. or 1s. 7d. per Foot, excluſive of carving the Capitals; Labour only 9d. per Foot.

5. The *Ionick* Capitals at 5s. per Foot.

6. The *Corinthian* and *Compoſite* Capitals, carving at 8s. per Foot, Facio Work.

ARTICLE XIV.

Of Fencing.

1. FOUR Foot Cleft Paling, with 10 Foot Rails (when 30 or 40 Rod) 12s. per Rod; Labour only 3s. per Rod.

2. Five Foot Cleft Paling, with 9 Foot Rails, three in a Loop, Work and all Materials 15s. per Rod; Labour 3s. 6d. per Rod.

3. Boarded Fencing, ſix or ſeven Foot high, with rough Feather-edg'd Boards, 1l. 5s. per Rod; Labour 4s. or 4s. 6d. per Rod.

4. Ditto, plained and beaded, 1l. 7s. per Rod; Labour only 5s. 6d. per Rod.

Ditto, of Oak, 1l. 12s. 6d. per Rod; Labour only 5s. 6d. or 6s. per Rod.

Palliſadoing.

6. Poſts of Oak, 6 Inches by 6, Rails 5 Inches, Pales 3 Inches by one Inch and a

Quarter of Oak, 4s. per Foot running Meaſure.

7. Ditto, of Fir, 3s. 3d. per Foot; Labour only, from 1s. 4d. to 1s. 6d. per Foot; the Pales morticed through the Rails five Foot above Ground.

8. Ditto with Oak; Poſts ſix Inches; Upper Rails 3 ½ by 4, Bottom Rails 6 by 3; Pales 3 Inches wide, 4 Foot and a Half high; Workmanſhip and all Materials 3s. per Foot; Labour only 1s. 3d. per Foot running Meaſure.

9. Ditto with Pales, 1 Inch and an Half ſquare, of Oak, 3s. 6d. per Foot; if of Fir, 3s. Labour 1s. 3d. to 1s. 6d. per Foot.

10. Ditto Gates, of 2-Inch Stuff, 10d. or 12d. per Foot ſuperficial for Work and Materials; Labour only 4d. or 5d.

11. Ditto of 3-Inch Oak, 1s. 2d. per Foot; Labour only 6d. or 7d. per Foot.

Of Park Paling.

12. Park Paling, one Rail in a Loop, 15s. or 16s. per Rod; Labour 3s. or 3s. 6d. per Rod.

13. Ditto, two Rails in a Loop, 18s. per Rod; Labour 4s. or 4s. 6d. per Rod.

14. Ditto, three Rails in a Loop, 1l. 1s. per Rod; Labour 5s. per Rod.

15. Ditto with ſawn Pales, 1l. 5s. per Rod; Labour, hewing and ſawing included, 9s. or 10s. per Rod.

Pold Gates Cleft.

16. Making, ſetting up the Poſts, and hanging the Gate to ditto, 5s. 6d. Labour only; Work and Stuff to ditto, from 12s. to 14s.

17. Ditto with ſawed Stuff, making, hanging, and ſawing included, from 16s. to 18s. Labour to ditto 7s. 6d.

18. Gate-Irons ſold by the lb.

ARTICLE XV.

Of Ground-Celling.

GROUND-CELLS 10d. or 12d. per Foot; Work only 4d. per Foot.

N. B. This is either leſs or more according to the Size of the Scantling.

ARTICLE XVI.

Of Squares and Coolers for Brewing.

COOLERS are made by the Foot ſuperficial. If they are made of Inch and Half Yellow Deal, 1s. 2d. or 1s. 3d. per Foot; Labour to ditto 4d. per Foot.

It will not be improper now to give a few Examples of caſting up the Contents of Carpenter's Work.

EXAMPLE I.

Suppoſe a *Floor* or *Partition*, or any other flat Work, be 21 Feet and a Half long, and 15 Feet and a Half in Breadth, how many Square is in that Dimenſion? Set it down thus:

	Feet.	*Inches.*
The Length	21	6
The Breadth	15	6
The Feet multiplied	105	0
	21	
is	315	
The Feet by Inches	7	6
Ditto	10	6
Inches by Inches		3
Total	333	3

So that the whole Product is three hundred and thirty-three Feet three Inches; which to bring into Squares, cut off the two laſt Figures thus, 3|33, and you have three Square, thirty-three Feet and three Inches, the Content required.

EX-

EXAMPLE II.

Let a *Floor* or *Partition* be 46 Feet 9 Inches long, and 35 Feet 10 Inches wide or high, and the Content in Squares and Feet required. Set down the Dimenſions thus:

	Feet.	*Inches.*	
The Length	46	9	
The Breadth	35	10	
The Feet multiplied	230		
	138		
is	1610		
The Feet by Inches	26	3	
Ditto	38	4	
Inches by Inches		7	6
	16|75	2	6

So that the Product is 16 Square 75 (or ¾ of a Square) and two Inches and a Half over, which is ſeldom regarded in Carpenters Work.

Theſe Examples may be ſufficient for the Meaſure of *Floors*, *Boarding*, *Partitions*, &c.

only remembering to deduct the *Stairs* and *Chimnies* from *Floors* and *Boarding*, and the *Doors* in *Partitioning*; but as *Roofing* is ſomething more difficult, I ſhall give an Example or two of that.

To meaſure Roofing.

ADMIT a Building to be 30 Feet in Breadth, and 65 Feet in Length; the outer Extent of the Walls, and the Content of this Roof required.

If the Roof is made *true Pitch*, as it is called, the Length of the Rafter (in this Caſe) need not be meaſured.

But take this for a *General* RULE, That the Length of the Rafter being then 3-4ths of the Breadth of the Building, which is 30 Feet, the Rafter is then 22 Feet 6 Inches long, which double (for both Sides) make 45 Feet, and that multiplied by 65, the Length of the Building, the Product is 29|25, or 29 Square and ¼.

Another way, ſomething ſhorter, is often practiſed, called *Flat* and *Half*, (as before mentioned). The *Flat* of the Building being the Length and Breadth multiplied together, thus:

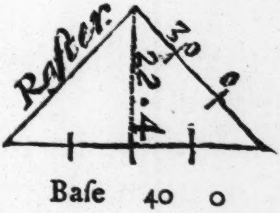
The Length	65	0
Multiplied by the Breadth	30	0
Produces	1950	0
Then adding the Half thereof	975	0
You have the Total as before	29|25	0

N. B. When you take the Dimenſion this laſt Way, you muſt write to it 1 ½, ſignifying *Flat and Half.*

Thus 1½)65 0
30 0

To meaſure Gable Ends.

THESE are the upright Ends of the *Roof*, whoſe Figure is deſcribed in the Margin. Let the Length of the Bottom or Baſe be 40 Feet, and the Length of the Rafter be 30 Feet, the Perpendicular or Height will be found to be 22 Feet 4 Inches near; then multiplying the whole Perpendicular by half the Baſe, or the whole Baſe by half the Perpendicular,



dicular, the Product will be 446 Feet 8 Inches, the Content required.

Practice.	*Feet.*	*Inches.*
The whole Perpendicular	22	4
The half Baſe	20	0
The Feet multiplied	440	0
Feet by Inches	6	8
Total Product	446	8
Otherwiſe the whole Baſe	40	0
By the half Perpendicular	11	2
The Feet multiplied	40	
is	440	
Forty Feet by two Inches is	6	8
Total as before	446	8

So that both Ways agree, and the Total is as above.

Should there be two or more Gable-Ends alike, or of one Bigneſs, you muſt multiply the Product by the Number of Times for the whole Content.

To

To meaſure Hip Roofs.

THESE are ſuch as have no *Gable-Ends*, but are ſloped or roofed all round the Building; and, if *true Pitch*, will be *Fat* and *Half* as the other; but if not *true Pitch*, take the whole Length of the Building by the Length of the two *Rafters* added together, and that is the Dimenſion; becauſe the two Hip Ends will make the ſame Quantity as if there had been Gables at each End.

Note, If the Building be broader at one End than the other, the Breadth muſt be taken in the Middle, for *Flooring*, *Roofing*, &c. or otherwiſe meaſure each End, and adding them together, take half the Sum for the Breadth; as for *Example:* If the Building were 30 Feet broad at one End, and but 28 Feet at the other, theſe added is 58, whoſe Half is 29 Feet, for a *Mean Proportion* or Breadth of the Building.

SECT. III.

Of WAINSCOTING, *or* JOINERS WORK.

WAINSCOTING is a Work generally done by the Joiners, and is meaſured by the Yard Square, containing nine Square Feet, and their Dimenſions are taken in Feet and Inches: Thus, they girt down every Moulding contained between the Cieling and the Floor with a String, which is accounted the Height of the Room, and the Circumference of the Room they take for the Length, deducting the Door, Windows, and Chimney.

The Seats of Windows, Cheeks, Sofies, Linings, &c. are all taken by themſelves; alſo Doors and Window-ſhutters, of whole Deal, are allowed Work and half Work, or double Work, if of 2-Inch Stuff, in regard to their being worked on both Sides, as I before obſerved under the 10th *Article* of the foregoing *Section.*

Of taking Dimenſions.

I ſhall give you an Example of one *Room* of Wainſcoting, which will ſuffice for the underſtanding of the Meaſurement of many *Rooms,* or a whole Houſe or Houſes.

Let the ſeveral Sides be meaſured, and ſet down as under:

	Feet.	Inches.
The North Side	16	5
Eaſt Side	14	3
South Side	16	4
Weſt Side	14	4

	Feet.	Inches.
The Juttings or Breaks of the Chimney	3	8
The *Round* of the Room is	65	5

Which being Part of a *Dimenſion*, ſet it down, and all the reſt, as follows, which will be the *Form* of your *Meaſuring Book*, viz.

		Feet	In.	Product.	
Round of the *Room*		65	0	682	6
Girt of the *Room* or Height		10	6		
Half Work of Shutters 2 times for 2 Wind.	2)	6	0	18	0
		1	6		
Linings to ditto, two times	2)	18	0	30	0
		0	10		
Linings to the Door		16	0	10	8
		0	8		
Half Work of the Door		6	6	9	9
		1	6		
		Total		750	1
Deduct the Chimney		4	6	18	0
		4	0		
		Total of Feet		732	1

Which being divided by 9, will give 81 Yards 3 Feet 11 Inches for the Content of this *Room*, and ſo of any other.

N. B. The above uſed to be the Method of taking Dimenſions of all Mouldings, &c. on Wainſcot, which now are paid for extraordinary by the Foot ſuperficial, if not agreed to be included in the Meaſurement of the Wainſcot as above.

The PRICE.

1. Plain ſquare joint Wainſcoting, of Yellow Deal, 3s. 6d. per Yard; Labour only 1s. or 1s. 2d. per Yard.

2. Deal Wainſcoting, of Inch and ¼ Deal, with ovolo and flat Pannels of 3-quarter Deal, 4s. or 4s. 6d. per Yard, according to the Goodneſs of the Work; Workmanſhip 1s. 4d. or 1s. 6d. per Yard.

3. If with raiſed Pannel 4s. 9d. per Yard; Workmanſhip 1s. 6d. or 1s. 8d. per Yard.

4. Ditto with right Wainſcot, or *Norway* Oak, Inch and Quarter Framing, and 3-quarter Pannels, 7s. 6d. or 8s. per Yard; Workmanſhip 2s. or 2s. 3d. per Yard.

Note, As *Bolexion* Work is laid by, I muſt introduce in its Room plain Dado Work.

5. Dado Work, made of Inch and Quarter Yellow Deal, 5s. 3d. per Yard, or 7d. per Foot, excluſive of Mouldings; Labour to ditto only 1s. 6d. per Yard.

6. Dado Work, made of Inch Yellow Deal, 4s. 6d. per Yard, or 6d. per Foot, excluſive of Moulding.

7. All Mouldings work'd by Hand, from 1s. to 1s. 6d. per Foot, Work and Materials; Labour from 6d. to 9d.

8. Ditto, worked with plain ſingle Architrave and other plain Moulding, 9d. per Foot; Labour 4d. ½.

All circular moulding Meaſure double, both Materials and Labour.

9. Dentil Cornices 3d. per Foot running Meaſure; extra for cutting the Dentil.

10. Jaumb Linings are meaſured by the Foot ſuperficial, and are from 6d. to 9d. per Foot ſuperficial, according to the Goodneſs and Thickneſs of the Stuff.

⁂ All Cornices, Architraves, Chimney-pieces, Baſe-moulding, and Sub-baſe, and all other Mouldings, are girt with a String, and the Girt multiplied by the Length, by which you have the Contents of any Moulding whatſoever.

SECT. IV.

I SHALL in this Section explain all that is neceſſary in the Performance of *Brick* Buildings, not only in the Method of Meaſuring, but alſo the Prices of the ſeveral Sorts of Work done by *Bricklayers*; but, before this, it will be proper to conſider the *digging* out of the Cellars or Foundations, till which the *Brick-work* cannot be done.

Digging then is a Work performed by the cubic or ſolid Yard, containing 27 Feet, or three Feet each Way, in *Length, Breadth*, and *Depth*.

In taking *Dimenſions* they are not ſo curious as in other *Works*, they ſeldom meaſuring nearer than to a Quarter of a Foot.

Suppoſe then a *Foundation* of a Houſe is dug out, 32 Feet 6 Inches long, 18 Feet 3 Inches wide, and 7 Feet 6 Inches deep, how many Yards is contained in that Cavity?

Feet.

	Feet.	Inches.		
The Length	32	6		
The Breadth	18	3		
	256			
	32			
Feet multiplied	576	0		
Feet by Inches	9	0		
Ditto	9	0		
Inches by Inches		1	6	
	593	1	6	ſuperf. Cont.
	7	6	0	the Depth.
Feet multiplied	4151	0		
Feet by Inches	0	7		
Feet by Parts	0	3	6	
Feet by Inches	296	6		
Inches by Inches	0	0	6	
Inches by Parts	0	0	3	
	4448	5	3	Solid Cont.

So that the ſolid Content of ſuch a *Foundation* is 4448 Feet, which, to bring into Yards, divide by 27, (the ſolid Feet in a Yard) thus:

27) 4448 (164 *ſolid Yards.*
27

174
162

128
108

Solid Feet | 20 *remains.*

Which is near three Quarters of a Yard more. As to the Inches and Parts, they are always rejected.

The PRICE

Will be variable according to the different Soil, as Clay, Gravel, Flints, &c. in which they are to be dug, but is generally from 3d. ½ to 5d. per Yard.

Another Obſervation muſt be made here, that as, in *Page* 2, it was premiſed, that the *Charge of carrying the Materials to the Work be added to the Eſtimation*, ſo alſo here, the Charge of carrying the Earth and other

Rubbiſh from the Work muſt be remembered.

Of Bricklayers Work.

THE principal Work in Building, done by Bricklayers, are, Walling, Tileing, Rough-caſting, &c. to each of which I ſhall ſpeak in their Order, and firſt,

Of Brick Walls.

The Particulars to be obſerved in meaſuring of *Brick-work*, are, firſt, that it is meaſured by the Rod of 16 Feet and a half Square, whoſe Product is 272 Feet and a Quarter, the Content of one Rod of Brick Work, at the ſtandard thickneſs of one Brick and a Half, and if not ſo, it muſt be reduced thereto by the following *Rule:*

Multiply the Number of Feet contained in the ſuperficial Content of the *Wall* by the Number of half Bricks that the *Wall* is in Thickneſs, which Product always divide by 3, (the Number of half Bricks in the Standard Thickneſs) and the Quotient is the true Content required.

EXAMPLE I.

Let a *Wall*, or the Contents of ſeveral *Walls*, be 255 Feet, and two Bricks and a Half thick, what is it reduced?

255 Superf. Content.
Multiplied by 5 No. of hf. Bricks.

Div. by No. of half 3)1275(425 Feet reduced
Bricks in the Standard. 12
7
6
15
15

So that the Anſwer is 425 Feet of reduced Brick-work.

EXAMPLE II.

Let the ſuperficial Content be 357 Feet, and three Bricks and a Half thick, what is it reduced?

357 Superf. Content.
7 Half Bricks.

Stand. Thickneſs. 3)2499(833 Feet reduced
24

. . 9

. 9

EXAMPLE III.

If the *Wall* be but one Brick thick, the Rule is ſtill the ſame.—Thus:

924 Superf. Content.
Multiply by 2 No. of hf. Bricks.

Stand. Thickneſs. 3)1848(616 Feet reduced
18

. . 4
3

18
18

Theſe Examples might ſuffice in even Numbers of Feet, but as it often happens there are Inches in the ſuperficial Content, as alſo in the Remainder, I ſhall give a few Inſtances of them.

EXAMPLE IV.

Let the ſuperficial Content be 539 Feet 5 Inches, and the Thickneſs 4 Bricks and a Half, what is it reduced?

```
     Feet.  Inches.
      539   5  Superficial Content.
        9      No. of half Bricks.
   ————————————
                  Feet.    Inches.
   3)4854   9(1618        3  Cont. reduced.
     3
   ————————————
     18
   ————————————
   · · 5
       3
   ————————————
      24
      24
   ————————————
   · · 9
```

EXAMPLE V.

Again, let the ſuperficial Content be 137 Feet 9 Inches, the Thickneſs 2 Bricks and a Half, what is it reduced?

Feet. *Inches.*
137 9 Superficial Content.
5 No. of half Bricks.
Feet. *Inches.*
3)688 9(229 7
6
. 8
6
28
27
And 1 remains.

Which is half of a Foot or four Inches, and the half of 9 Inches added will make the Whole 229 Feet ſeven Inches reduced as above.

Note, When the Thickneſs is juſt one Brick and Half, the Content is ready reduced.

And to bring theſe reduced Feet into Rods, take this RULE:

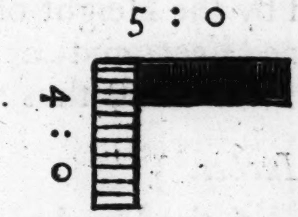
Multiply the Product by 16, (the ſquare Quarters in a Foot) and divide the Product thereof by 4353 (the ſquare Quarters in a Rod) and the Quotient is the Number of Rods, and the Remains, divided by 16, give the Feet contained therein.

For EXAMPLE:

3618 Superf. Content.
Multiplied by 16 the ſquare Quarters in a Foot.
———
21708
3618
———
Sq. Q. in a Rd. 4353|57888|13 Rod.
4353
———
14358
13059
———
Quar. in a Foot 16)1299(81 Feet.
128
———
19
3

So that 1618 ſuperficial reduced Feet is 13 Rod, 81 Feet of Brick-work, and the like of any other Sum.

Obſerve the ſeveral Thickneſſes of the Walls, and that you make every Deduction out of its proper Thickneſs; likewiſe, when you meaſure two Walls that conſtitute an Angle, that the Length of one be taken to the Inſide, and the other to the Outſide of the Wall, as in the Figure,—thus:

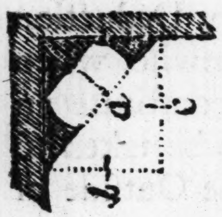


Meaſure Chimnies as a ſolid Wall, and deduct the Vacancy between the Jaumbs one Way, and the Mantle and Floor the other Way. The Funnels (in regard to the Trouble of them, and pargeting the Inſide) are allowed as ſolid.

Square Chimnies are as eaſy to meaſure as a Wall, but the Method for *Angle* Chimnies being not ſo well known, here is an Example or two of them, which will be ſufficient for all Caſes that can happen.

EXAMPLE I.

Fig. I.

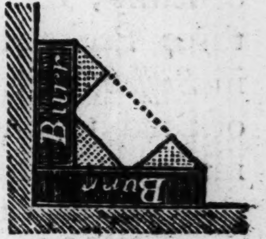


Let the Form of them be as in *Fig.* I. which is a Chimney ſtanding in a ſquare Corner, and equally each Way from the Corner; in this Caſe, where the Breaſt or Front is ſix Feet wide, take half the ſame, as at *a*, being three Feet, multiplied by the Height of the Story: As, ſuppoſe nine Feet and a Half, then your Dimenſion will ſtand thus:

Feet.	*Inches.*	
9	6	the Height of the Story.
3	0	half the Breaſt.
27		
1	6	
28	6	ſuperficial Content.

Then conſider how many *half Bricks* thick are contained in the ſaid half Breaſt, (nine Inches being the Length of a Brick), and you will find eight, or four Bricks thick; then working as before taught, you will find the reduced Content 76 Feet, from which muſt be deducted the Vacancy as in ſquare Chimnies; if they do not ſtand equally from the Corner, or the Corner be not ſquare, the uſual Way is to lay out the Angle parallel to the Walls, as *b* and *c*, and take one *whole* Line, multiplied by the Height of the Story, and the *half* of the other Line conſidered for the Thickneſs gives the Content. Sometimes there are *Burrs* for the under Funnels on both Sides, as in *Fig.* 2. which are meaſured in their reſpective Thickneſſes as a ſquare Wall; alſo remember to meaſure the Trimmers that ſupport the Hearths, taking the Length by the Girt of the *Arching* of them, accounting them *half a Brick* thick; ſo that if they are ſix Feet long, and one Foot 6 Inches girt, there are three Feet of reduced Brick-work therein.

Fig. 2.



Before I proceed to the Prices of Brick-work, I think it will not be improper to inſert the following Obſervations:

1. Of laying Bricks, which is a Thing of no ſmall Conſequence in a Building for the well working and bonding of Brick-work (or as ſome Workmen call it, breaking of Joints) conduces very much to its

Strength; therefore let Care be taken that Bricks be not laid Joint on Joint in the middle of Walls, as ſeldom as may be, but let there be good Bond made there as well as on the Outſides.

2. Let me commend to your Care to be ſure to procure good ſtrong *Mortar*; the Way to make it, according to *Vitruvius*, is to put three Parts of dug or Pit Sand to one of Lime; the uſual Way in *London* is to put three Pecks of Sand to one Buſhel of Lime; in *Suſſex* they put one Buſhel and a Half of Sand to one of Lime, but the Lime is made of Stone; but if it be Chalk Lime, they put two Buſhels and a Quarter of Sand to one of Lime.

From all the various Proportions of Lime and Sand abovementioned, I think it reaſonable to infer, that the Proportion of *Lime* to *Sand*, in making of *Mortar*, ought to be various, according to the Goodneſs or Badneſs of theſe Materials, and therefore is rather to be regulated by the Judgment of experienced Workmen in each particular County, than by any ſtated Proportions; I ſhall therefore proceed to ſay ſomething of the Method of making *Mortar*. It is the beſt Way not to uſe *Mortar* as ſoon as it is made, (nor in making it) to make the *Lime* run before it is mixed with the *Sand,* (as ſome will do) but rather to take the *Sand* and throw it on the *Lime* whilſt it is in Stones before it is run, and ſo to mix it together, and then wet it, by which means it will be the ſtronger, and when it has lain awhile made before it is uſed, will not be ſo ſubject to blow and bliſter.

3. If Bricks are laid in Winter, let them be both kept and laid as dry as poſſible, but if in the Summer, wet them, either by dipping them in Water as you lay them, or throw Water into every Courſe as you lay them for thereby they will better unite with the Mortar than they would if laid dry.

4. If Bricks are laid in the Summer-time, be ſure to cover the Walls to prevent their drying too faſt, for if the Mortar dry too haſtily, it doth not cement ſo firmly to the Bricks as when it dries gradually.

5. If Bricks are laid in the Winter, alſo be ſure to cover them very well, to protect them from Rain, Snow, or Froſt, which laſt is a mortal Enemy to all Mortar, eſpecially to that which has taken wet but juſt before the Froſt aſſaults it.

In *Building* with *Bricks,* there are ſeveral Things to be conſidered: As,

Firſt, That all Walls ought to be perpendicular to the Ground-work, for the

Right Angle is the true Cauſe of all Stability, both in artificial and natural Poſition, a Man ſtanding firmeſt when moſt upright.

Secondly, That the maſſieſt and heavieſt Materials be the loweſt, as fitter to bear than to be borne.

Thirdly, That the Walls as they riſe, diminiſh proportionably in Thickneſs, for Eaſe both of Weight and Expence.

Fourthly, That certain Courſes or Ledges of more Strength than the reſt, be interlaid, like Bones, to ſuſtain the Fabrick from total Ruin, if the under Parts ſhould decay.

Fifthly, That the Angles be firmly bound, which are the Nerves of the whole Edifice, and therefore are commonly fortified by the *Italians,* in their Brick-Buildings, on each Side of the Corners, with well-ſquared Stones, yielding both Strength and Grace.

Sixthly, In carrying up the Walls of a Building, not to make any Wall above three Feet high, before you work up the next adjoining Wall, that ſo they may be joined together, and make firm Bond in the Work; for it is an ill Cuſtom among ſome *Bricklayers,* to carry, or work up, a whole Story of the Party-Walls, before they work up the Fronts or other Walls adjoining, that ſhould be bonded, or worked up together, which cauſes Cracks and Settlings in the Whole.

The *PRICE.*

1. Brick-Walls are from 8l. to 8l. 10s. per Rod; Workmanſhip from 1l. 5s. to 1l. 8s. per Rod.

2. Ditto Brick Fronts, from 8l. to 8l. 10s. or 9l. per Rod, excluſive of Arches, Facios, and Corniſhes, which are paid for by the Foot ſuperficial; Workmanſhip only 1l. 8s. per Rod.

N. B. One Rod of Brick-work, at the Standard Thickneſs, will require 4500 of Bricks, one Hundred and a Quarter of Lime, and two Load and a Half of Sand: But whereas, there is a wide Difference in the Value of one Rod of Brick-work, according to the various Cuſtoms of Countries by Workmen's Wages, and in the Prices of Materials, I ſhall here ſubjoin a Table, which, by the Directions here given, will infallibly ſhew the Value of one Rod of Brick-work in any Part of *England*, according to the Statute Thickneſs of one Brick and a Half, allowing 4500 of Bricks to a Rod, 22s. for Mortar, and 24s. for Workmanſhip, and according to eighteen different Prices of Bricks per Thouſand.

The

The TABLE.

	s.		£.	*s.*	*d.*
The Value of one Rod of Brick-work, allowing 22s. for Mortar, 24s. for Work, and Bricks 4500, at	8	per Thouſ. is	4	2	0
	9		4	6	6
	10		4	11	0
	11		4	15	6
	12		5	0	0
	13		5	4	6
	14		5	9	0
	15		5	13	6
	16		5	18	0
	17		6	2	6
	18		6	7	0
	19		6	11	6
	20		6	16	0
	21		7	0	6
	22		7	5	0
	23		7	9	6
	24		7	14	0
	25		7	18	6

The Uſe of the Table.

In order to know the Price of one Rod of Brick-work any where, you muſt firſt inquire at what Rate you can have your Bricks laid in per Thouſand, and then, if the Price of the Workmanſhip and Mortar be the ſame as above-mentioned, you have no more to do than to ſeek the Price you can have the Bricks at per Thouſand in the Table, and right againſt it, you have the Value of one Rod of Brick-work, as required.

But if there ſhould be any Difference in the Work, as there will in ſome Countries, from the various Charge of Workmens Wages, you may ſtill know the Value of a Rod by this *Table*, by obſerving, that a Trowel-man and Labourer, although but ſlow, can perform one Rod of rough Work in five Days. One Example will make it plain.

EXAMPLE.

What is the Value of one Rod of Brick-work, at the Statute Thickneſs of one Brick and a Half, allowing 22s. *for Mortar,* 16s. *per Thouſand for Bricks,* 2s. 2d. *per Day for a Bricklayer, and* 16d. *per Day for a Labourer.*

The RULE.

As the Price of the Mortar is the ſame in the Queſtion as the Table is calculated at, you have nothing elſe to do but to caſt up what the Work comes to, and either add to, or ſubſtract the Difference from the Price of the *Work* in the *Table*, and it will give you the Price or Value of one Rod of *Brick-work* as required.

PRACTICE.

	£.	s.	d.
Five Days of a *Bricklayer*, at 2s. 2d. per Day.	0	10	10
Five Days of a Labourer at 1s. 4d. per Day	0	6	8
The Sum	0	17	6

Which 17s. 6d. you muſt ſubſtract from the Price of the *Work* allowed in the Table, viz. 1l. 4s. and there remains 6s. 6d. then ſeek the Value of one Rod of *Brick-work* in the Table at 16s. per 1000 for Bricks, and right againſt it you will find 5l. 18s. from which ſubſtract the Difference in the Workmanſhip, viz. 6s. 6d. and there remains 5l. 11s. 6d. which is the Price ſought for as required.

But further, to know the Value of one Rod of *Brick-work*, at the Statute Thickneſs of a Brick and a Half, let the Price of the Materials, Workmens Wages, or Time allowed for the doing it be what it will.

EX-

EXAMPLE.

What is the Value of one Rod of Brickwork at the Statute Thickneſs of a Brick and Half, allowing the Workmen ſix Days for the doing it, Bricks at 20s. *per Thouſand, and* 4500 *Bricks,* 32 *Buſhels of Lime, at* 6d. *per Buſhel, two Load of Sand, at* 3s. *per Load, and the Bricklayer's Work at* 1s. 6d. *per Day?*

DEMONSTRATION.

	£.	s.	d.
4000 Bricks at 20s. per Thouſ.	4	0	0
500 Bricks ditto —— ——	0	10	0
32 Buſhels of Lime at 6d. per Buſh.	0	16	0
2 ½ Load of Sand at 3s. per Load	0	7	6
6 Days of a Trowelman at 3s. per Day (and ſome Places 2s. and 2s. 6d.)	0	18	0
6 Days of a Labourer at 1s. 6d. per Day (and ſome Places 1s. 4d.)	0	9	0
The Price required	7	0	6

1. *Rubb'd Arches* of any Sort, from 18d. to 20d. per Foot; Work only 1s. per Foot.

2. *Plain Facios*, rubb'd, at 13d. per Foot; Work only 8d. per Foot.

3. *Brick Corniſhes,* from 4s. to 5s. per Foot; Work from 3s. to 3s. 6d. per Foot, lineal Meaſure.

4. *Under-Pinning* at 5d. per Foot, running Meaſure; Work only from 1d. to 1d. ½ per Foot, lineal Meaſure.

5. *Digging and bricking of new Wells,* from 7s. 0d. to 8s. per Foot in Depth only; Work from 2s. 6d. to 3s. 6d. per Foot.

6. *Chimnies* are ſometimes done by the Rod, as other *Brick-work,* and ſometimes by the Hearth; when they are done by the Rod, they are worth from 8l. to 8l. 10s. per Rod; Workmanſhip 1l. 8s. per Rod.

Note, The Scaffolding to be conſidered.

Here it may not be amiſs to obſerve:

1. That no Timber [illegible]e Floors be laid within twelve Inches of the Fore-ſide of the Chimney-jaumbs.

2. Let all Joiſts on the Back of any Chimney be laid with a Trimmer, at ſix Inches Diſtance from the Back.

3. Let no Timber be laid within the Funnel of any Chimney; for without theſe Cautions the Houſe may be in Danger of FIRE, which ought always to be remembered, and (at all Events) guarded againſt.

A R-

ARTICLE II.

Of Tileing.

TILEING is meaſured by the Square, as Carpenters meaſure their Roofs. You muſt obſerve, in taking Dimenſions of Tileing, that you meaſure the whole Length, that is, as far as the Tiles are laid for the Length, and take from the Eaves to the Ridge for your Breadth or Depth, and thereby you will find the true Content of the Tileing required. When Hips and Vallies happen in a Roof, every Foot in Length muſt be added to the Meaſure as ſquare Feet.

The PRICE

1. Plain Tileing, if to an 8-Inch Gauge, 1l. 4s. per Square; if to a 7-Inch Gauge, 1l. 7s. per Square, and if to a 6-Inch Gauge, 1l. 10s. per Square; Work only 4s. per Square.

2. Ditto, to find all Materials, excluſive of Tiles, from 10s. to 12s. per Square.

3. Ripping old Tileing, according to the Goodneſs of ditto, from 14s. to 18s. per Square.

4. Pantileing, when pointed, Work and all Materials, 1l. 1s. per Square; Labour only, 2s. per Square.

5. Ditto, without Pointing, 18s. or 19s. per Square.

6 Ditto, with old Pantiles, 10s. 6d. per Square.

7. *Dutch* glazed ditto, 1l. 16s. per Square

8. *Engliſh* ditto, at 1l. 12s per Square.

9. The Materials required to a Square of plain Tileing, at a

6-Inch Gauge - -	760	Tiles to a Square.
7-Inch Gauge - -	690	
8-Inch Guage - -	600	
Pantiles - - -	170	

There is alſo required to a Square of Plain Tileing, one Peck of Tile-pins, two Buſhels of Lime, five Buſhels of Sand, one Bundle of Laths, and between five and ſix hundred of Nails. Commonly one Square is accounted a Day's Work for a Trowel-man and Labourer.

EXAMPLE III.

Of Rough-caſting, Plaiſtering, &c.

ROUGH-CASTING, Plaiſtering, Cielings, &c. are done by the Yard Square, and the Dimenſions are taken in Feet and Inches, as the Joiners Work.

The principal Things to be obſerved in taking Dimenſions and meaſuring the ſame, are as follows:

1. To make Deduction for Chimnies, Windows, and Doors.

2. To make no Deductions for rendering upon Brick-work, for Doors and Windows, by reaſon the Jaumbs and Heads generally exceed the Vacancies.

3. That ſuch Summers and Girders as lie below a Cieling be deducted, if the Workmen find Materials, otherwiſe not.

4. If the Workmen find Materials for rendering between the Quarters, one-fifth Part muſt be deducted for the Quarters, Braces, &c. but if the Work only is found, you muſt meaſure the Whole as whole Work, for the Workmen could have performed the Whole much ſooner if there had been no Quarters there.

5. In meaſuring Whiting and Colouring between Quartering, allow a fourth Part extraordinary for the Returns of the Quarters, or to take the Length with the String, and to girt the Quarter, which is the trueſt Way.

The PRICE.

Pargetting or *Plaiſtering* is of divers Kinds; as,

1. With Lime and Hair Mortar upon bare Walls, Lathing included, at 1s. per Yard; Lab[illegible]r 5d. or 6d. per Yard.

2. Com[illegible]n Rough-caſting, Work and all Materials, from 1s. 2d. to 1s. 6d. per Yard; Work only 6d. per Yard.

3. Rough-caſting, with Stone Mortar and raiſed Pannels, from 2s. to 2s. 6d. per Yard; Work only 9d. per Yard.

4. Rough-caſting, with Stone Mortar, done in Imitation of Stone-work, from 2s. 6d. to 3s. per Yard; Work only 8d. per Yard.

5. Plaiſtering upon Brick-work, finiſhed in a Manner nearly reſembling Stone, 2s. per Yard; Labour 8d. per Yard.

6. Plain Mouldings 6d. and circular 9d. per Foot; enriched ſtrait Mouldings 1s. 2d. and circular 1s. 8d. per Foot.

7. Lathing and Plaiſtering, inſide Work, 1s. per Yard; Work 5d. per Yard.

8. Rendering on Brick-work 6d. per Yard; Work only 2d. per Yard.

9. For Lathing and Plaiſtering common Cielings 1s. yer Yard; Work 5d. per Yard.

10. Ditto plain floated Cielings 1s. 3d. per Yard; Work 8d. per Yard.

11. For Lathing and Plaiſtering of Walls on both Sides 10d. per Yard; Work 4d. per Yard.

12. For White-waſhing with Whitening and Size, Work and Materials, 2d. per Yard.

⁂ One Bundle of Oaken Sap-Laths is ſufficient for ſeven Yards of Plaiſtering, and one Bundle of Heart-Laths for ſix Yards.

In all theſe Works the Scaffolding muſt be conſidered, and an Allowance made for it.

N. B. The Quantity of Lime and fine Sand, for finiſhing Mortar, muſt be equal.

SECT. V.

Of MASONS WORK.

MASONS meaſure their Work either *ſuperficial* or *ſolid*, and ſometimes both.

The Dimenſions are taken in Feet, Inches, and the 12th Part of an Inch; the *Solids* are Block of Marble, or any Kind of Stone, Columns, Corniſhes, &c. the *Superficies* are Pavements, Slabs, Chimney-Pieces, and the like. It is to be obſerved, that Maſons firſt meaſure the Cube of the Stone, and then ſuperficial plain Work, alſo ſuperficial moulded Work, (if any) as follows:

Firſt, They account all ſuch Stones as are above two Inches thick, at ſo much per Foot, ſolid Meaſure, and for the Work they meaſure the Superficies of the Stone; but then they meaſure no more of the Stone than what appears without the Wall. Their Dimenſions are taken with a String, which they preſs into all the Mouldings, by bring-it acroſs them.

But their *Method* being not ſo well known, it may be proper to give an Example of one Chimney-piece, as a Guide to all others.

Firſt then, take the *Length* of the *Mantle* or Head-ſtone, and the *Slab* (whoſe Extent is generally the ſame) for one Sum of the Dimenſion, and the *Breadth* of *both* added together, with an Inch more for the under Edge of the *Mantle*, and half an Inch (or whatever it is) for the upper Edge, which being all added, is the other Sum of the Dimenſion.

2. Take the *Length* of the *Jaumbs* or Sides, allowing an Inch longer than is ſeen, (they going in below the Slab) for one Sum, and the *Breadth* of one, (girting all that is ſeen) and double it for the Sum of the ſecond Dimenſion.

3. If there are *Slips* and *Naſeings* to ditto, meaſure the *Length* by all the Girt that is ſeen in *Breadth*, and either double the Breadth, or make the Dimenſion twice.

4. *Fire-ſtone Hearths* and *Coveing Stones* muſt be caſt up by themſelves, and are meaſured all that appears in Sight.

EXAMPLE.

Of the Dimenſions of a Marble Chimney-piece.

	F.	I.	P.	Products.		
Length of Mantle and Slab - - -	4	10	0			
Breadth of ditto - - - - -	2	10	6	13	10	9
Length of Jaumbs - - - -	3	9	0			
Breadth of both ditto, added - -	1	10	0	6	10	6
Length of Slips and Noſeings - -	3	11	0			
Breadth of both ditto - -	1	6	0	5	10	6
Total in Feet, Inches, and Parts				26	7	9
Fire-ſtone to ditto.						
Length of Coveings - -	4	0	0	16	0	0
Length of one (therefore times two)	2	0	0			
Length of the Hearth - - -	3	2	0	6	7	0
Breadth of ditto - - -	2	1	0			
Total of Feet and Inches				22	7	0

Here you have the whole Operation, at one View, of a Chimney-piece meaſured, which, as it is of *Marble* a (VALUABLE Stone) is taken in Feet, Inches, and the 12th Part of an Inch, and muſt be *always carefully ſet down and caſt up*; each of theſe Parts of an Inch being worth Three Farthings in ſome *Marble*, and therefore would be very unjuſt to reject the leaſt Number of them: But to come to the Quantity, in the Ex-

Example before us, you have in this Chimney-piece, twenty-ſix Feet, ſeven Inches, and nine Parts (or three Quarters of an Inch) of *Marble*; and of *Fire-ſtone*, twenty-two Feet, ſeven Inches; and ſo you may caſt up any other whatever.

The PRICES.

1. Black and White Veined *Italian* Marble, 1l. 1s. per Foot Cube.

2. Superficial plain Work on ditto, 4s. per Foot.

3. Superficial moulded Work to ditto, from 5s. to 5s. 6d.

4. Slabs of ditto, from 5s. to 5s. 6d.

5. Purple Marble in Slabs, 8s. per Foot.

6. Dove Marble at 6s. per Foot ſuperficial.

7. Fire-ſtone Hearths and Coveings, at 1s. 6d. per Foot ſuperficial.

8. *Portland* Blocks 2s. 3d. per Foot Cube.

9. Superficial plain Work on ditto, 1s. 4d. per Foot.

10. Superficial moulded Work on ditto, 1s. 8d. per Foot.

11. *Portland* Slabs in Chimney-pieces, 1s. 6d. per Foot.

12. Ditto, two Inches thick, 2s. per Foot.

13. *Portland* Paving, in ſtrait Courſes, 1s. 6d. per Foot.

14. Ditto Octagon and Black Dots, 2s. 6d. per Foot.

15. Black and white Marble Squares, 3s. 6d. per Foot.

16. *Purbeck* Paving, 7d. or 8d. per Foot.

17. *Portland* Aſtragal Steps, at 3s. 6d. per Foot running Meaſure.

18. Plain ditto, at 3s. per Foot running Meaſure.

19. *Purbeck* Steps, 2s. 6d. per Foot running Meaſure.

20. *Portland* Copeing, 1s. 10d. per Foot running Meaſure.

21. But when larger, to be cubed and meaſured as ſuperficial plain Work.

22. So alſo *Portland* Curbes for Ironwork, &c. muſt be cubed firſt, and then meaſured as ſuperficial plain Work.

23. Alſo the Holes cut in the ſame for Iron, at 2d. each.

24. Baſes of Columns, Architraves, Frizes, and Cornices, of Marble, are 5s. per Foot ſuperficial for the Work only.

25. Ditto, on *Portland* Stone, 18d. per Foot Facio-work, the Stone to be valued at per Foot Cube as before-mentioned.

26. The Shafts of Columns and Plaiſter fluted, at 20d. per Foot Facio Work, on *Portland* Stone.

27. Carving of the Capitals, Facio Work, 8s. per Foot, excluſive of the Stone.

N. B. Theſe Prices (eſpecially in the Marble) muſt ſometimes be augmented, according to the Beauty and Goodneſs of the Stone.

SECT. VI.

Of GLAZIER's *Work.*

GLAZIERS meaſure their Work by the ſuperficial Foot, their Dimenſions are taken in Feet and Inches, but, as *Glaſs* is as dear as moſt other Materials uſed in *Building*, their Manner of Meaſurement differs from the former, for they take the Dimenſions with a two Foot or three Foot *Sliding-Rule*, divided decimally, (as it is called) that is, each Foot into 100 Parts, ſo that three Quarters or 9 Inches is 75, half a Foot or 6 Inches are 50, and a Quarter or three Inches is 25 of the Parts.

Therefore admit a *Pane* or *Light* of leaded Glaſs be three Feet ſix Inches long, and one Foot ſix Inches wide, they ſet them down (as on their *Rules)* 350 by 150; therefore the Meaſurer of *Glaziers* Work ſhould underſtand *Decimal Arithmetick,* allowing the Feet as Integers, and all the Parts Decimals: For Example, the aforeſaid Pane or Light is thus:

EXAMPLE I.

By Croſs Multiplication.			By Decimals.	
Length	3	6	Length	3.50
Breadth	1	6	Breadth	1.50
	3	6		17500
	1	6		350
Total	5	3		5.2500

So that the whole Content of one *Light* is five Feet and a Quarter, or 25 Parts of 100.

Should there be ſeveral Lights or Panes of Glaſs of one and the ſame Bigneſs, you need but meaſure one, and multiplying that by the Number of Panes gives the Content of the Whole.

Glazing of Saſhes are meaſured by the Foot ſuperficial, taking the Dimenſions of the Glaſs from Outſide to Outſide of the Extremity, both in Heighth and Width.

N. B. The middle Work of the Saſhes within the Outſide, is always included in the Meaſure.

Suppoſe one ſingle Saſh meaſures 3 Feet 6 Inches in Width, and 3 Feet 6 Inches in Heighth, you will find, by Croſs Multiplication, (a Method that is generally uſed) the Anſwer, as under.

EXAMPLE II.

	Feet.	Inches.	
Height	3	6	
Width	3	6	
	9		
	1	6	
	1	6	
		3	
	12	3	ſuperficial Content of one Saſh when multiplied by the whole Number, ſuppoſe 12, gives the Content total 147 Feet.
	12		
	144		
	3		
	147		

To meaſure Circular or Oval Windows, take the ſame Breadth as their Diameters as if they had been ſquare Windows, becauſe in cutting out the Quarries of Glaſs there is a great Waſte made, and more Time expended therein than if it had been a ſquare Window.

The PRICE.

1. Glazing with Squares and Quarries, in Lead-Work, is from 10d. to 1s. per Foot.

2. Saſhes glazed with Crown Glaſs, puttied on both Sides, and Brads included, from 12d. to 14d. per Foot.

3. Ditto, with *Newcaſtle* Glaſs, at 10d. per Foot.

4. Ditto, with Waved or Jealous Glaſs, from 2s to 2s. 6d. per Foot.

5. Ditto, with Plate Glaſs, Diamond-cut, from one to two Foot, from 5s. to 6s. per Foot.

6. Ditto, from two to three Foot, from 7s. to 8s. per Foot; and ſo in Proportion to the Size and Goodneſs of the Glaſs.

7. To glaze with Quarries, the Workmen finding only Lead, Solder and Work at 3d. per Foot; Work only at 2d. per Foot.

8. For taking down of Quarry Glaſs, ſcouring it, ſoldering, banding, and ſetting it up again, from 2d. to 2d. ½ per Foot.

The Glaziers generally reckon that 50lb. of turned Lead is ſufficient for 100 Foot of Quarry Glaſs.

SECT. VII.

Of PLUMBERS *Work.*

PLUMBERS Work is uſually done by Weight, viz. the Great Hundred, or 112lb. In covering of Flats, Roofs, Gutters, &c. there is generally allowed from 7 to 10 or 12lb. to the Foot ſuperficial.

The PRICE.

1. All Sheet Lead, excluſive of Solder and Labour, 1l. 3s. 4d. per Hundred, or 2d. ½ per lb. Labour and Solder paid extra; at which Rate, every Foot of Lead, weighing 7 lb. to the Foot, is worth 1s. 5d. ½ per Foot.

Ditto, 8lb. at 1s. 8d. per Foot.
Ditto, 9lb. at 1s. 10d. ½ per Foot.
Ditto, 10lb. at 2s. 1d. per Foot.
Ditto, 11lb. at 2s. 3d ½ per Foot.
Ditto, 12lb. at 2s. 6d. per Foot.

Note, The Charge of covering any Place with Lead, of any Thickneſs, may be eaſily found, by meaſuring the Superficies thereof, and by obſerving the Prices ſet down to the ſeveral Thickneſſes as beforementioned.

2. All Rain-water Pipes, Rain-water Ciſterns, batten'd Ciſterns, and Lead Pumps, at 1l. 5s. per Hundred, or 2d. ¾ per lb.

3. All Water-pipes, from 3-Quarters to a 7-Inch Bore, Labour included, at 1l. 5s. 8d. per Hundred.

4. Saſh Weights, &c. at 1l. 1s. per Hundred.

5. Soldering the Joints of Water-pipes, for 3-Quarters of an Inch Bore, at 2s. 6d. per Joint.

6. Ditto, 1-Inch, at 3s. per Joint.

7. Ditto, 1-Inch and an Half, at 3s. 6d. per Joint.

8. Ditto, for two Inches, at 4s. 6d. per Joint.

9. Ditto, for two Inches and an Half, at 5s. 6d. per Joint.

10. Ditto, for three Inches, at 7s. per Joint.

11. Ditto, for three Inches and an Half, at 8s. 6d. per Joint.

12. Ditto, for four Inches, at 10s. per Joint.

13. Ditto, for four Inches and an Half, at 11s. per Joint.

14. Ditto, for five Inches, at 12s. 6d. per Joint.

15. Ditto, for five Inches and an Half, at 14s. per Joint.

16. Ditto, for ſix Inches, at 16s. per Joint.

17. Ditto, for ſix Inches and an Half, at 19s. per Joint.

18. Ditto, for ſeven Inches, at 1l. 1s. per Joint.

19. Solder at 9d. per lb.

20. Braſs Cocks and Boſſes, from three Inches to an Inch and a Quarter Diameter, 1s. 3d. per lb.

21. Ditto, Solder, Labour, ſetting on, and all Charges included, if an Inch and a Half Diameter, at 7s. 6d. each.

22. Ditto, Inch and a Quarter, at 5s. 6d. each.

23. Ditto, Inch, at 4s. 6d. each.

24. Ditto, 3-Quarters, at 3s. 6d. each.

25. Ditto, Half-Inch, at 3s. each.

26. If not Boſſes, deduct from the ſmall ones 4d. the middle Size 6d. and the largeſt 8d.

27. Stop-Cocks at 1s. 3d. per lb.

28. Ditto, with ſetting on, Solder, Labour, &c. included, Inch and an Half Diameter, at 8s. 6d. each.

29. Ditto, Inch and a Quarter, at 7s. each.

30. Ditto, Inch, at 5s. 6d. each.

31. Ditto, 3-Quarters, at 4s. 6d. each.

32. Ditto, Half an Inch, at 3s. 6d. each.

33. Ball-Cocks, the Ball ſix Inches in Diameter, the Cocks one Inch, at 12s. each.

34. Ditto, five Inches and three Quarters Diameter, at 9s. each.

35. Ditto, four Inches and a Half Diameter, at 6s. each.

36. The general Allowance by Plumbers for old Lead, is 14s per Hundred.

37. To exchange old Lead for Sheets new run, 4s. 8d. per Hundred, or ½ per lb.

38. For caſting of old Lead, and the Plumber to return the ſame Weight that he received of old Lead, at 4s. 8d. per Hundred.

SECT. VIII.

Of PAVIOURS *Work.*

PAVIOURS Work is meaſured by the Yard Square, or three Foot each Way, containing 9 Square Feet, as before ſhewn in other Works.

The PRICE.

1. New Pebble Paving, not leſs than 14 Inches deep, Work, and all Materials, at 3s. 6d. per Yard. The Pebbles in each Yard ought to be 300 Weight.

2. Ditto, 15 Inches deep, Work and all Materials, at 4s. per Yard. The Pebbles in each Yard ought to be 400 Weight.

3. Ditto, from 16 to 18 Inches deep, Work and all Materials, at 4s. 6d. per Yard. The Pebbles in each Yard ought to be 500 Weight.

4. New Purbeck Square Paving, 6 Inches thick, at 6s. per Yard.

5. If the hard blue Sort, at 6s. 6d. per Yard.

6. New *Flanders* Brick Paving, at 3s. 6d. per Yard.

7. New *Purbeck* Square Paving, 4 Inches thick, at 5s. 3d. per Yard.

8. If the hard Sort, at 5s. 9d. per Yard.

9 New Rag Paving or Bowlers, at 2s. 6d. per Yard.

10. Pebble Paving or Rags, taken up and new laid, Gravel included, from 6d. to 8d. per Yard.

11. *Purbeck* Paving, Work only (Gravel included) at 7d. per Yard.

12. Paving with Red Bricks, Work and all Materials, at 1s. 2d. per Yard; Work only, 5d. per Yard.

13. Ditto, White Bricks, at 1.8 d. per Yard.

14. Paving with Clinkers, at 2s. 6d. per Yard.

15. Paving with 9-Inch *Pammants*, Work and all Materials, at 2s. 8d. per Yard; Work only, 6d. per Yard.

16. Free-Stone Pavements, cut into promiſcuous Lengths and Breadths, at 3s. per Yard.

17. White Marble veined with Red, &c. in Squares for Paving, from 5s. to 5s. 6d. per Foot.

18. Pavement of *Portland* Stones fit for Halls, at 1s. 6d. per Foot.

See more of Paving in Sect. V. No. 13, 14, 15, 16, Page 72.

Note, The Prices are calculated according to the Prices of the Materials ſet down in Sect. I.

To know how many Paving-Tiles, Bricks, &c. will pave a Floor. *Note,*

That	Tiles	
36	6	Inches Square will pave a Yard Square.
$20\frac{1}{4}$	8	
16	9	
13	10	
4	12.	

Statute Bricks laid flat, 32 to a Yard Square.

White Lumps laid, 32 to ditto.

Bricks or Lumps laid edgeways, 48 to ditto.

Dutch Clinkers 90 to ditto.

SECT. IX.

Of PAINTERS *Work.*

PAINTERS meaſure their Work by the Yard Square, in the ſame Manner as the Joiners, only with this Difference, that inſtead of accounting Doors and Window-ſhutters Work and Half, they have double Work, as being painted on both Sides; and they alſo meaſure all Edges, &c. where the Bruſh goes.

The

The PRICE.

1. Saſh Frames at 1s. 6d. each, and Saſh Lights from 1d. to 1d. ½ each.

2. Window Lights and Caſements at 3d. each.

3. Outſide Painting three Times in Oil, if well done, is worth from 6d. to 8d. per Yard; Inſide Painting, new Work, of common Colours, at 6d. per Yard.

4. Inſide Painting, old Work, of common Colours, at 4d. per Yard, but of extraordinary Colours, as

5. Olive Colours at 8d. per Yard.

6. *Pruſſian* Blue at 10d. per Yard.

7. Greens at 1s. per Yard.

8. Modillion Corniſhes from 6d. to 1s. per Foot running Meaſure.

9. Common Outſide Corniſhes, at 3d. per Foot running Meaſure.

10. Iron Bars from 1d. to 2d. each, or more, if very large.

N. B. All Carved Cornices to Rooms, and other carved Ornaments to ditto, muſt be paid for double Meaſure.

11. White-Lead, Pearl-Colour, Lead-Colour, Cream-Colour, Stone-Colour, Wainſcot

or Oak-Colour, ground in Oil, at 4d. per lb. one Pound of any of which Colours, with Oil, will paint eight ſquare Yards.

12. Chocolate-Colour, Mahogany-Colour, Cedar, and Walnut-tree-Colour, ground in Oil, at 6d. per lb. one Pound of any of which Colours, with Oil, will paint ten ſquare Yards.

13. Gold-Colour, Olive-Colour, Pea-Colour, fine Sky Blue, mixed with *Pruſſian* Blue, Orange Colour, Lemon-Colour, Straw-Colour, Pink-Colour, and Bloſſom-Colour, ground in Oil, from 10d. to 1s. per lb. one Pound of any of theſe Colours, with Oil, will paint eight ſquare Yards.

14. Fine deep Green, ground in Oil, at 2s. 6d. per lb. one Pound of which, with Oil, will paint twenty ſquare Yards.

15. One Pound of Firſt Primer, ground in Oil, will paint twenty ſquare Yards.

16. One Pound of Second Primer, ground in Oil, will paint twelve ſquare Yards.

The Oils uſed in Houſe-Painting, are,

Linſeed Oil at 10d. per Quart.

Turpentine Oil at 1s. per Quart.

Beſt Drying Oil, at 1s. per Quart.

Painting Bruſhes of ſeveral Sizes, from 2d. to 6d. each.

Putty at 4d. per lb.

Double Size uſed by *Painters* for the priming new Work, at 4s. per Firkin, or 2d. per Quart.

Single Size at 1s. 6d. per Firkin, or 1d. per Quart.

SECT. X.

Of THATCHERS *Work.*

THATCHERS meaſure their Work by the Square, and their Dimenſions are taken the ſame as for Tileing; for which, ſee the 2d Article of *Section* IV. page 63.

The PRICE.

1. Thatching Work, and all Materials, at 10s. 6d. per Square; Work only, at 4s. per Square.

2. To a Square of Thatching there is required two-thirds of a Load of Straw, one Bundle of Laths, 40 Withs, or a Pound of Rope-yarn, 40 Thatching Rods, and 200 of Nails.

SECT.

SECT. XI.

Of BLACKSMITHS *Work.*

BLACKSMITHS Work is done by the Pound Weight.

The PRICE.

1. All Sorts of hammered Work, as Chimney-Bars, Stays, Upright Window-Bars, Shutter-Bars, Pump-Work, Bolts, Saddle-Bars, Cramps, Holdfaſts, Dogs, Gudgeons, Hoops, and all Black-work of the ſame Nature, at 3d. ½ and 4d. per lb.

2. Caſements for Windows, Croſs Window-Bars filed, and Work of the like Nature, from 6d. to 9d. per lb. according to the Goodneſs of Work.

3. Iron Doors and Shutters from 10d. to 1s. per lb.

4. Pins, Hooks, Chains, &c. to Stable-Bails, at 4d. per lb.

Of Nails.

5. The general Sorts are, Bill Brads, Gunner's Brads, Plain Brads, Dye Hobbs, Shidder Hobbs, Thick Hobbs, Claſp Hobbs,

Lead Nails, Draw Nails, Deſk Nails, Roſe-Nails, Flat-head Nails, Flat-point Nails, Scupper Nails, Sharp Nails, Middle Nails, Square Nails, and Pike Nails; all which are ſold by the 1000, and including them all, they are from 12d. to 2s. per 1000.

6. Flat-pointed Nails are ſold by the Hundred Weight, of which there are ſix Sorts, and are ſold from 1l. 9s. to 1l. 11s. per Hundred Weight.

7. The other Sort of Nails, viz. Batten Brads, are ſold by the 1000, of which there are ten Sorts, and are ſold from 8d. ½ to 2s. 10d. per 1000.

8. Clout Nails are ſold by the 1000, of which there are two Sorts, and are ſold from 15d. to 7s. per 1000.

9. Clout Brads are ſold at 3s. 6d. per 1000.

10. Pound Nails are ſold by the Hundred Weight, of which there are five Sorts, and are ſold from 1l. 12s. to 1l. 15s. per Hundred Weight, or from 4d. to 4d. ½ per lb.

11. Dog Nails are ſold by the 1000, of which there are three Sorts, and are ſold from 3s. 9d. to 5s. 9d. per 1000, or from 4d. to 4d. ½ per lb.

12. Jobent Nails are ſold by the 1000, of which there are five Sorts, and are ſold from 10d. ½ to 18d. ½ per 1000.

13. Ribbing Nails, there are ſeveral Sorts, viz. from five to ten Inches, and are ſold at 27s. per Hundred Weight.

14. Round-headed Nails are ſold by the 1000, of which there are nine Sorts, and are ſold from 11d. ½ to 5s. 5d. per 1000.

15. Glazier's Sprigs are ſold by the 1000, of which there are three Sorts, and are ſold from 7d. to 10d, per 1000.

16. Timber Nails are of ſeveral Sorts, viz. from ſix to 15 or 16 Inches, and are ſold at 1l. 10s. per Hundred Weight.

17. Joiners Rivets are ſold by the lb. and are from 4d. to 4d. ½ per lb.

Of Hinges.

18. I-L. Hinges, the beſt are ſold by the Pair, viz. thoſe of ſix Inches in Length at 9d. per Pair, ſeven Inches at 10d. eight Inches at 1s. 1d. nine Inches at 1s. 2d. ten Inches at 1s. 6d. eleven Inches at 2s. and twelve Inches at 2s. 9d. per Pair. There are larger Sizes at 10d. per lb.

19. I-L. Hinges, with riſing Joints, are ſold by the Pair, viz. thoſe of ſeven Inches

in Length, at 1s. 3d. eight Inches 1s. 5d. nine Inches 1s. 10d. ten Inches 1s. 11d. eleven Inches at 3s. and twelve Inches at 3s. 6d. per Pair.

20. Pew Hinges are ſold by the Dozen; the Lengths are from ſix to 10 Inches, and are ſold from 9s. 6d. to 1l. 6s. per Dozen.

21. Shutter Hinges are ſold by the Dozen, viz. thoſe of ſix Inches in Length at 7s. 3d. ſeven Inches at 10s. 6d. eight Inches at 12s. and thoſe of nine Inches at 16s. 6d. per Dozen.

22. Side Hinges are ſold by the Dozen, viz. thoſe of five Inches in Length, at 4s. 9d. per Dozen, ſix Inches at 6s. ſeven Inches at 8s. 6d. eight Inches at 10s. 6d. nine Inches at 12s. and thoſe of ten Inches at 13s. 6d. per Dozen.

23. Dove-tailed Hinges, of which there are five Sorts, the beſt are ſold from 3s. to 5s. 9d. per Pair; the ordinary Sorts are from 2d. to 6d. per Pair.

24. Black Hinges, Cheſt Hinges, Cheſt Haſps, Hooks and Hinges, Scuttle Hinges, and Strap Hinges, are ſold by the Dozen, and are from 3s. 6d. to 11s. per Dozen.

25. x Garnet Hinges, with riſing Joints, are ſold by the Dozen, and are from 5s. 9d. to 16s. per Dozen.

26. x Garnet and Scuttle Hinges, are ſold at 1l. 12s. 6d. per Hundred Weight.

27. x Garnet Hinges, with filed Joints, are ſold at 1l. 17s. 6d. per Hundred Weight.

28. Hinges with Hooks, are ſold at 1l. 10s. per Hundred Weight, and, if they have Stay Hooks, then they are ſold at 1l. 12s. or 1l. 12s. 3d. per Hundred Weight.

29. There are cheaper Sorts of Hinges, viz. *Lancaſhire* Hinges, Balcony Hinges, Dove-tailed Hinges, Cheſt Hinges, x Garnet Hinges, Shutter Hinges, and Side Hinges, which are ſold from 1l. to 1l. 11s. per Dozen.

30. Smooth-filed Hinges, viz. Box Hinges, Balcony Hinges, Cheſt Hinges, Clock-caſe Hinges, Deſk Hinges, Pew Hinges, Shutter Hinges, and Side Hinges, of which there are ſeveral Sorts, and are ſold from 1l. to 2l. 3s. per Dozen; ſome ſmooth-filed Hinges are ſold from 4s. to 7s. 6d. per Pair.

31. Hold-faſts and Wall-hooks are ſold at 1l. 13s. per Hundred Weight; thoſe for Joiner's Uſe are ſold at 4d. ½ per lb.

32. Hooks and Eyes for Gates are ſold from 3d. ½ to 4d. per lb.

33. Long-tinned Latches are ſold by the Dozen, of which there are eight Sorts, and are from 2s. 4d. to 8s. per Dozen.

34. Varniſhed Latches, of which there are five Sorts, are ſold from 2s. 7d. to 8s. 2d. per Dozen.

35. Spring and Thumb Latches, of which there are nine Sorts, are ſold from 3s. 7d. to 14s. 6d. per Dozen.

36. Latches with Braſs Knobs, of which there are three Sorts, are ſold from 14s. to 18s. per Dozen.

37. Rimmed Latches of ſundry Sizes, of which ſome are Iron-caſed, ſome Braſs-caſed, and ſome Sliding-caſed, are ſold from 2s. to 15s. each.

Of Locks.

38. D. Gate Locks, if two or three *Steel* Wards, *Slit* Key, or *Letter* Key, are ſold from 2s. 6d. to 14s. 6d. per Dozen.

39. Hanging-Locks, Pad-Locks, and Slit Key-Locks, are ſold from 3s. 6d. to 16s. 6d. per Dozen.

40. Bridged and Secret Pad-Locks, are ſold from 9s. to 16s. per Dozen; ſome are ſold by the ſingle Lock, from 1s. 8d. to 5s. 9d. per Lock.

41. Cabinet Locks, Box Locks, Cupboard Locks, and Till Locks [whether in Sute or not] are ſold from 3s. 9d. to 16s. per Dozen.

42. Cabinet Locks, Till Locks, and Eſcrutore Locks, in Sute, five Locks and one Key, from 2s. to 7s. 3d. per Sute. There are higher priced ones, but not of common Uſe.

43. Of Inſide Locks for Cheſts, Deſks, Tills, Cupboards, and Boxes, there are ſeveral Sorts, viz. x Keys, x Wards, x x Wards, x x and Bullet Wards, S. Bitted, &c. which are ſold from 3s. 4d. to 1l. 17s. 6d. per Dozen.

Ditto, not ſold in Dozens, from 2s. 3d. to 11s. per Lock.

44. Iron-rimmed Locks are of ſundry Sorts, viz. once dead, twice dead, with Pullbacks, and Braſs Knobs; one Bolt, two Bolts, and three Bolts, plain, and the Wards round; Braſs-rimmed Locks, Cloſet dittto, with Spindles not caſed; Caſed and Sliding-caſed, are ſold at various Prices, from 1l. to 1l. 10s. each: Theſe are likewiſe ſold in Sute, of which there are 26 Sorts, and are ſold from 1l. 15s. to 7l. 5s. per Sute.

Ditto, Single, from 1s. to 30s.

45. Plate Cloſet Locks are ſold from 11s. 6d. to 1l. per Dozen.

Ditto, with Screws, from 18d. to 3s. 6d. each.

Ditto, with double Springs, from 2s. to 17s. each.

Ditto, with ſingle Springs, from 6s. 9d. to 9s. each.

46. Baſtard *Banbury* Stock-Locks are ſold from 6s. to 9s. per Dozen.

47. Livery Stock-Locks are ſold from 7s. to 25s. per Dozen.

48. Plate Stock-Locks from 8s. 6d. to 26s. per Dozen.

49. Spring Stock-Locks, twice Dead and Spring, are ſold from 2s. 3d. to 10s. each.

Ditto, in Sutes, from 11s. to 2l. each.

Of Bolts.

50. Balcony Bolts by the Dozen, from 6s. to 29s. per Dozen.

Ditto, by the Pair, from 3s. to 12s. 9d. per Pair.

51. Spring Bolts and Saſh Bolts are ſold from 18d. to 9s. 6d. per Dozen.

52. Shutter Bolts are ſold from 10s. 6d. to 18s. 6d. per Dozen.

SECT.

SECT. XII.

Directions for applying the preceding Rules to Practice, in eſtimating the CHARGE *of erecting any Houſe of any Height and Bigneſs, built of Brick and Timber.*

AS it is neceſſary for every Perſon before he begins to erect a Building, to have Deſigns or Draughts drawn upon Paper, Vellum, &c. as well for Eaſe and Expedition, as for the preventing Miſtakes in carrying on the intended Deſign, ſo likewiſe it is abſolutely neceſſary for the Prevention of Errors in eſtimating the Charge thereof; and, in large Structures, it were not amiſs if a MODEL was made of the Whole, either in *Paſteboard, Wood, Clay,* or the like, whereby all the *Fabric* would be ſeen at once in Miniature. However, when you are to eſtimate the Charge of erecting any Building, the Length, Breadth, Heighth, &c. being given, firſt draw a *Draught* of the *Ground Plot* or *Ichnography* of each Floor in a particular Paper by itſelf, with the Length, Breadth, and Heighth of each Apartment intended, becauſe many Times the Conveniencies or

Contrivances in one Story, differ from thoſe in another, either in the Bigneſs of the Chimnies, or Diviſion of the Rooms, ſome being larger in one Story than in another; as alſo the Form and Faſhion of each Front, together with Doors, Windows, and Ornaments, (if any be deſigned) are to be ſhewn in the *Orthographies* or *Draughts* of the Uprights; and if for a Timber Building, the Scantling or Dimenſions of every particular Piece, I would adviſe to be ſet in its proper Place to which they belong in the *Diagrams*, in Characters which will be of Uſe to the Workmen in carrying on their Work more readily, as well as for eſtimating the Charge.

The *Draught* being drawn, and the Dimenſions of every Particular being inſerted as before deſcribed, you may then proceed to the Eſtimation thereof.

1. Begin with the outſide Body or Carcaſe, and conſider how much Brick-work, and of what Sort of Work, and what Timber Work is contained therein, and eſtimate that firſt.

2. Proceed to the Roof, and conſider of the Timber-work and Tileing, and eſtimate that.

3. Conſider how many Windows, and of what Sort, and what Caſements are required,

and the Charge of glazing them; what Doors and Door-Caſes, and of what Sort; the Frontiſpieces, (if any) and of what Order; the Corniſh for the Eaves, (if any) and of what Sort, whether a Dental Corniſh, a Modillion Corniſh, or a Cove-Eaves.

4. What Rough-Caſting, and of what Sort.

5. Conſider if there is any Stone-Work in the Front, and of what Sort.

6. Return to the Inſide Work, and conſider what Partitions, either of Brick or Timber, what Doors and Door-Caſes, and of what Sort, there is contained in each Room, and what Locks, Bolts, and Hinges, are required thereto.

7. What Sort of Timber Floors, Boarded Floors, and Cloſets, belonging to each Room.

8. How many Stair-Caſes, and of what Sort.

9. How many Rooms to wainſcot, and of what Sort of Work; how many Window-Shutters to make, and what Sort, and what Nails, Bolts, and Hinges, are required thereto.

10. What Cielings and Walls to plaiſter and white-waſh, and of what Kind of Work.

11. How many Windows to caſe or line up; and laſtly, how many Floors of Brick or Stone to pave.

Note, As ſoon as the *Draught* is drawn, to prevent Miſtakes in eſtimating, read over the preceding Rules, and as ſoon as you meet with any one Article that ſuits your preſent Purpoſe, there ſtop, and meaſure that Part of the *Building* firſt, as taught in its proper Place in the foregoing Sections, to which you muſt have Recourſe, both for the Method of Meaſuring, and alſo when you have eſtimated that Part, write it down, and proceed to read again the Rules for eſtimating, till you have gone through all the Articles in your preſent Undertaking; and thereby you will eſtimate the Whole, and not be ſo liable to forget any Article as otherwiſe you would. Alſo,

After you have gone through eſtimating every Particular of the *Building* you can think of, you muſt ſtill add ſomething for unſeen or unthought of Articles, for which you muſt allow five, ten, or twenty Pounds, *more or leſs*, according as you ſhall judge neceſſary, becauſe there are many trifling *Jobs* not to be thought of in eſtimating.

SECT. XIII.

Of LIGHT.

BY having the Magnitude of a *Room*, to know what *Light* is ſufficient for the ſame, together with the Number of Windows,

dows, and their Proportions ſuitable thereto, alſo to regulate the Bigneſs of the *Chimney*, viz. the Breadth, Heighth, Depth, and Square of the Funnel, that it may not be liable to ſmoak.

To know what Light is proper for any Room, the RULE *is*:

Let the Dimenſions of the *Room* be given, viz. the Length, Breadth, and Heighth; multiply the Length and Breadth of the *Room* together, and the Product by the Heighth of the Square Root of their Product, is the Quantity of *Light* required.

EXAMPLE I.

Suppoſe a Room was 24 Feet long, 16 Feet broad, and 24 Feet high, how much *Light* would be proper?

The Length and Breadth multiplied is 384 Feet, and that Sum multiplied by the Heighth, viz. 14 Feet, the Product is 5376 Feet, whoſe Square Root is 73 Feet three Inches, which is the Quantity of *Light* required.

The Intent of this *Proportion* is to avoid the common Errors, which run to Extremes, of making a Room too glaringly *light*, or (what is worſe) too gloomy and dark. And here it is to be obſerved, that moſt Windows, when of a proper Size, have between twenty and thirty Feet in the ſuperficial Content of each, viz. from three to four Feet in Breadth, and from ſix to eight Feet in Heighth; ſo that the Room, by this Example, ſhould have three Windows therein, each containing 24 Feet 5 Inches in the ſuperficial Content.

EXAMPLE II.

Suppoſe a Room is a *Cube*, or perfectly *Square*, i. e. equal in Heighth, Length, and Breadth, and admit that to be twelve Feet, which being multiplied each by the other as before, the Product will be 1728, whoſe Square Root will appear to be 41 Feet ſix Inches and a Half near, and ſhould have two Windows therein, containing twenty Feet, 9 Inches and a Quarter ſuperficial in each; and this Rule is univerſal for all Rooms whatſoever.

Of Chimnies.

As *Chimnies* and *Chimney-Pieces* are a great Ornament to ROOMS, as well as convenient in cold Climates, and the Bigneſs of them as to Heighth, Breadth, and Depth, hath hitherto only been gueſſed at, and (for the moſt Part) ſet out, as it were by Chance, I have here calculated a Table which will be ſuitable to all Purpoſes, viz. *Cloſets, Rooms, Halls, Kitchens, &c.* beginning with a Chimney of twice its Breadth in Heighth, to a Chimney of twice its Heighth in Breadth adapted to, and from a *Cloſet* of ſix Feet ſquare, to a *Hall, &c.* of 60 Feet ſquare.

TABLE I.

If the Square of the Room be	Then ſhould the Breadth of the Chimney be		And their Heighths are		And their Depths from the Front to the Back is	
Sq. Feet.	Ft.	In.	Ft.	In.	Ft.	In.
6	1	6	3	0	1	1½
9	2	0	3	1½	1	3⅜
12	2	6	3	3	1	5¾
15	3	0	3	4½	1	7⅛
18	3	6	3	6	1	9
21	4	0	3	7½	1	10⅞
24	4	6	3	9	2	0¾
27	5	0	3	10½	2	2⅝
30	5	6	4	0	2	4½
33	6	0	4	1½	2	6¾
36	6	6	4	3	2	8⅛
39	7	0	4	4½	2	10⅛
42	7	6	4	6	3	0
45	8	0	4	7½	3	1⅞
48	8	6	4	9	3	3¾
51	9	0	4	10½	3	5⅝
54	9	6	5	0	3	7½
57	10	0	5	1½	3	9⅜
60	10	6	5	3	3	11¼

Becauſe there will fall out ſeveral Bigneſſes between thoſe in the foregoing Table, I have

I have here made *another*, between ſome of the moſt uſeful Sizes therein, by which it will be eaſy to calculate any others.

TABLE II.

Feet ſqu.			Ft.	In.		Ft.	In.
15	0	The Breadth of the Chimney ſhould be	3	0	And their Heighths are	3	4½
15	6		3	1		5	4¾
16	0		3	2		3	5
16	6		3	3		3	5¼
17	0		3	4		3	5½
17	6		3	5		3	5¾
18	0		3	6		3	6
18	6		3	7		3	6¼
19	0		3	8		3	6½
19	6		3	9		3	6¾
20	0		3	10		3	7
20	6		3	11		3	7¼
21	0		4	0		3	7½
21	6		4	1		3	7¾
22	0		4	2		3	8
22	6		4	3		3	8¼
23	0		4	4		3	8½
23	6		4	5		3	8¾
24	0		4	6		3	9

As theſe Tables are calculated for *Square Rooms*, it will be proper to ſhew how they may be applied to *Rooms* that are longer than broad, by making a *mean Proportion* (as *Palladio* has judiciouſly done for the Height of Rooms, in his firſt Book, *Chap.* 23.) of which there are *three Caſes*, that they may be applied to the Side, End, or Angle of a Room, as the Builder ſhall think proper.

CASE I.

Add the Length and Breadth together, and take the Half of that Sum for the Square of the Room.

CASE II.

Multiply the Length by the Breadth, and take the Square Root of that Product for the Square of the Room.

CASE III.

Multiply the Length by the Breadth, (as in the ſecond Caſe) and add the Length and Breadth together, as in the firſt, then divide the Product of the ſecond, by Half the Sum of the firſt, and take the Quotient for the Square of the Room. Thus:

EXAMPLE I.

Suppoſe a Room be 24 Feet long, and 16 Feet broad, which added will be 40 Feet; the Half of which is 20 Feet, the Square of the Room ſought for by the firſt Rule.

EXAMPLE II.

Admit, as before, 24 be multiplied by 16, the Product will be 384, the Square Root of which is 19 Feet 7 Inches 1 Quarter, which is the *Mean* by the ſecond Rule.

EXAMPLE III.

Suppoſe, as before, the Product ſought for is 384 in the ſecond Rule, and the Half of the Sum as in the firſt be 20, then divide 384 by 20, the Quotient will be 19 $\frac{1}{2}$, the third *Proportion* by the third Rule. Either of theſe *Proportions* may be uſed, as the *Conveniency* or *Ornaments* ſhall require.

But ſhould it happen that a Room ſhould be ſo large, that two Chimnies ſhould be thought more ornamental or convenient than one, it will then be proper to divide the Length of the Room in two, and then by the whole Breadth and Half the Length, you may find a mean *Proportion.*

EXAMPLE IV.

Suppoſe a Room be 90 Feet long and 30 Feet broad, then Half the Length is 45, and the *Proportion* (according to the firſt Rule) is 37 Feet and an Half.

Again, ſuppoſe a Room be 60 Feet long, and 30 Feet broad, Half the Length is 30;

then will 30 Feet be the Square of the Room required: So that two Chimnies of the *Proportion* of a 30-Foot Room, will be ſufficient for a Room of 60 by 30.

To find the Depth of all Chimnies from the Front to the Back this Rule is general, viz. add the Breadth and Heighth together, and take *one-fourth* of the Sum for the Depth: As for

EXAMPLE V.

Suppoſe a Room be 18 Feet ſquare, which you will find in the firſt Column of the firſt Table, and againſt it in the ſecond Column you will find three Feet ſix Inches, the Breadth; and in the third Column, three Feet ſix Inches the Height; which being added together is ſeven Feet, one-fourth of which is one Foot nine Inches, the Depth of the Chimney in the fourth Column.

Again, Suppoſe a Room be twenty Feet ſquare, which having found in the ſecond Table, the Breadth will be three Feet ten Inches, and the Heighth three Feet ſeven Inches, and being added together make ſeven Feet five Inches, one-fourth of which is one Foot ten Inches and a Quarter, the Depth of the Chimney required.

As to the reſt, or all that need be further ſaid, will be eaſy to comprehend, if you conſider, that from ſix Feet to ſixty Feet (the Squares of the Rooms) that to every ſix Inches in the Bigneſs of the Room, it adds one Inch to the Breadth of the Chimney, and adds one Quarter of an Inch to the Heighth, as is plain by inſpecting the *Second Table.*

Then for the Bigneſs of the Funnel, ſo as to clear the Smoak, obſerve this *general Rule.*

Take three-fourths of the *Depth* of the Chimney for the Side of the Square of the Funnel.

An EXPLANATION *of the* FOUR *preceding* TABLES, *viz.*

THE firſt Row of Figures on the left Side of each Table, ſhews the Scantling or Size of one Side of the Piece, and the Scantling of the other Side of the Piece is in the uppermoſt Row of Figures, and the Price thereof in each of the other Squares. The firſt Figure in each Square ſtands for Pence, and the other for Farthings.

EXAMPLE TABLE I.

Suppoſe you would know the Price of one Foot of Stuff, whoſe Sides are 10 Inches by 5, firſt look on the Left Hand Side of the Table for the largeſt Scantling, which in this Example is 10 Inches, and from thence guide your Eye in a ſtraight Line until you come right under 5 on the Top of the Table, the Scantling of the other Side, and in the Angle of Meeting you will find ſet down 5, 0, which is 5d. being the Price ſought.

The ſame Rule is to be obſerved in finding the Price to any other Scantling in either of the Tables, as for Inſtance:

Suppoſing it were required to find the Price of a Foot of Stuff whoſe Scantling is larger than any in the Tables, as 22 by 18.

TABLE I. RULE.

Firſt take the Half of both the Scantlings, and look for the Price thereof in the Tables, and four Times that Price is the Price ſought. The Half of the Scantling given is 11 by 9, and the Price of it, by the firſt Table is 10d. $\frac{1}{4}$; and four Times that Price is 3s. 5d. the Price ſought for. The ſame of any other.

Either of theſe Tables may be uſed for as much again as they are made for, by only doubling the Price ſet down; or for half ſo much, by taking half the Price ſet down.

I have now gone through what I propoſed, and have only this to add, that I hope the Reader will make proper Allowances in Prices when better Work and Materials ſhall exceed the Deſigns of theſe Computations; and wiſh, that this Treatiſe may prove as uſeful as I intended, viz.

TO INSTRUCT OTHERS.

In which, if my Wiſhes do not ſucceed, I ſhall reſt ſatisfied with the ſecret Pleaſure of having intended well, and think my Time not miſapplied, becauſe it hath been ſpent in an agreeable, as well as an innocent Amuſement.

FINIS.

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TABLE I. *This Table ſhews the Value of one Foot of Oak, or any other Timber, that is ſquared and cut to any Scantling or Size for Building, at the Rate of Fifteen Pence per Foot Cubical Meaſure.*

	2		2½		3		3½		4		4½		5		5½		6		6½		7		7½		8		8½		9		9½		10		10½		11		11½		12	
	d	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*q*	*d*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*
12	2	2	3	0	3	3	4	1	5	0	5	2	6	1	6	3	7	2	8	0	8	3	9	1	10	0	10	2	11	1	11	3	12	2	13	0	13	3	14	1	15	0
11½	2	1	2	3	3	2	4	0	4	3	5	1	6	0	6	2	7	0	7	3	8	1	9	0	9	2	10	1	10	3	11	1	12	1	12	2	13	0	12	1		
11	2	1	2	3	3	1	4	0	4	2	5	0	5	3	6	1	6	3	7	1	8	0	8	2	9	0	9	2	10	1	10	3	11	2	12	0	12	2				
10½	2	0	2	2	3	1	3	3	4	1	4	3	5	2	6	0	6	2	7	0	7	2	8	1	8	3	9	1	9	3	10	1	11	0	11	2						
10	2	0	2	2	3	0	3	2	4	0	4	2	5	0	5	3	6	1	6	3	7	1	7	3	8	1	8	3	9	1	9	3	10	1								
9½	2	0	2	1	2	3	3	2	3	3	4	2	4	3	5	1	5	3	6	1	6	3	7	2	7	3	8	1	8	3	9	1										
9	1	3	2	1	2	3	3	1	3	3	4	0	4	2	5	0	5	2	6	0	6	2	7	0	7	2	7	3	8	1												
8½	1	3	2	0	2	2	3	0	3	2	4	0	4	1	4	3	5	1	5	3	6	0	6	2	7	0	7	2														
8	1	2	2	0	2	2	2	3	3	1	3	3	4	0	4	2	5	0	5	1	5	3	6	1	6	2																
7½	1	2	2	0	2	1	2	2	3	0	3	2	3	3	4	1	4	2	5	0	5	2	5	3																		
7	1	1	1	3	2	0	2	2	2	3	3	1	3	2	4	0	4	1	4	3	5	0																				
6½	1	1	1	2	2	0	2	1	2	2	3	0	3	1	3	3	4	0	4	1																						
6	1	1	1	2	1	3	2	0	2	2	2	3	3	0	3	1	3	3																								
5½	1	0	1	1	1	2	2	0	2	1	2	2	2	3	3	0																										
5	1	0	1	1	1	2	1	3	2	0	2	1	2	2																												
4½	0	3	1	0	1	1	1	2	1	3	2	0																														
4	0	3	1	0	1	1	1	1	1	2																																
3½	0	2	0	3	1	0	1	1																																		
3	0	2	0	3	0	3																																				
2½	0	2	0	2																																						
2	0	1																																								

N. B. *This Table will do for the valuing of many Pieces of Fir.*

TABLE II. *This Table ſhews the Value of one Foot of Oak, or any other Timber, that is ſquared and cut to any Scantling or Size fit for Building, at the Rate of* 1s. 6d. *per Foot Cubical Meaſure.*

	2		2½		3		3½		4		4½		5		5½		6		6½		7 0		7½		8		8½		9		9½		10		10½		11		11½		12	
	d	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*q*	*d*	*d*	*q*	*d*	*q*	*d*	*q*	*q*	*d*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*
12	3	0	3	3	4	2	5	1	6	0	6	3	7	2	8	1	9	0	9	3	10	2	11	1	12	0	12	3	13	2	14	1	15	0	15	3	16	2	17	1	18	0
11½	2	3	3	2	4	1	5	0	5	3	6	2	7	1	7	3	8	2	9	1	10	0	10	3	11	2	12	0	13	0	13	2	14	1	15	0	15	3	16	2		
11	2	3	3	1	4	0	4	3	5	2	6	1	6	3	7	2	8	1	8	3	9	2	10	1	11	0	11	2	12	1	13	0	13	3	14	1	15	0				
10½	2	2	3	1	4	0	4	2	5	1	5	3	6	2	7	1	7	3	8	2	9	0	9	3	10	2	11	0	11	3	12	2	13	0	13	3						
10	2	2	3	0	3	3	4	1	5	0	5	2	6	1	6	3	7	2	8	1	8	3	9	1	10	0	10	2	11	0	11	2	12	2								
9½	2	1	3	0	3	2	4	0	4	3	5	1	5	3	6	2	7	0	7	3	8	1	9	0	9	2	10	0	10	2	11	1										
9	2	1	2	3	3	1	3	3	4	2	5	0	5	2	6	1	6	3	7	1	7	3	8	2	9	0	9	2	10	0												
8½	2	0	2	2	3	0	3	2	4	1	4	3	5	1	5	3	6	1	6	3	7	1	8	0	8	2	9	0														
8	2	0	2	2	3	0	3	2	4	0	4	2	5	0	5	2	6	0	6	2	7	0	7	2	8	0																
7½	1	3	2	1	2	3	3	1	3	3	4	1	4	3	5	0	5	2	6	0	6	2	7	0																		
7	1	3	2	1	2	2	3	0	3	2	4	0	4	1	4	3	5	1	5	3	6	0																				
6½	1	2	2	0	2	1	2	3	3	1	3	2	4	0	4	2	4	3	5	1																						
6	1	2	1	3	2	1	2	2	3	0	3	1	3	3	4	0	4	2																								
5½	1	1	1	3	2	0	2	1	2	3	3	0	3	1	3	3																										
5	1	1	1	2	1	3	2	0	2	2	2	3	3	0																												
4½	1	0	1	1	1	2	1	3	2	1	2	1																														
4	1	0	1	1	1	2	1	3	2	0																																
3½	0	3	1	0	1	1	1	2																																		
3	0	3	1	0	1	0																																				
2½	0	2	0	3																																						
2	0	2																																								

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N. B. *This Table will do for Valuing of Fir ſawn to any Scantling, or for Oak ſawn but on one Side only, or hewn.*

TABLE III. *This Table ſhews the Value of Oak, or any Timber, that is ſquared and cut to any Scantling or Size fit for Building, at the Rate of One and Twenty Pence* per *Foot Cubical Meaſure.*

	2		2½		3		3½		4		4½		5		5½		6		6½		7 0		7½		8		8½		9		9½		10		10½		11		11½		12	
	d	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*q*	*d*	*d*	*q*	*d*	*q*	*d*	*q*	*q*	*d*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*
12	3	2	4	1	5	1	6	0	7	0	7	3	8	3	9	2	10	2	11	1	12	1	13	0	14	0	14	3	15	3	16	2	17	2	18	1	19	1	20	0	21	0
11½	3	1	4	0	5	0	5	3	6	3	7	2	8	1	9	0	10	0	11	0	11	2	12	2	13	1	14	0	15	0	15	3	16	3	17	2	18	1	19	1		
11	3	1	4	0	4	3	5	2	6	1	7	1	8	0	8	3	9	2	10	1	11	1	12	0	12	3	13	2	14	2	15	1	16	0	16	3	17	2				
10½	3	0	3	3	4	2	5	1	6	0	6	3	7	2	8	1	9	0	9	3	10	3	11	2	12	1	13	0	13	2	14	2	15	1	16	0						
10	2	3	3	2	4	1	5	0	5	3	6	2	7	1	8	0	8	3	9	2	10	0	10	3	11	2	12	1	13	0	13	3	14	2								
9½	2	3	3	2	4	0	4	3	5	2	6	1	6	3	7	2	8	1	9	0	9	2	10	1	11	0	11	3	12	1	13	0										
9	2	2	3	1	4	0	4	2	5	1	5	3	6	2	7	1	7	3	8	2	9	0	9	3	10	2	11	0	11	3												
8½	2	2	3	0	3	3	4	1	5	0	5	2	6	0	6	3	7	1	8	0	8	3	9	1	9	3	10	2														
8	2	1	2	3	3	2	4	0	4	3	5	1	5	2	6	2	7	0	7	2	8	0	8	3	9	1																
7½	2	1	2	3	3	1	3	3	4	1	5	0	5	1	6	0	6	2	7	0	7	2	8	1																		
7	2	0	2	2	3	0	3	2	4	0	4	2	5	0	5	2	6	0	6	2	7	0																				
6½	1	3	2	1	2	3	3	1	3	3	4	1	4	3	5	1	5	3	6	1																						
6	1	3	2	1	2	2	2	0	3	2	4	0	4	1	4	3	5	1																								
5½	1	2	2	0	2	2	2	3	3	1	3	2	4	0	4	0																										
5	1	2	1	3	2	1	2	2	2	3	3	1	3	2																												
4½	1	1	1	3	2	0	2	1	2	2	2	3																														
4	1	0	1	2	1	3	2	0	2	1																																
3½	1	0	1	1	1	2	1	3																																		
3	0	3	1	0	1	1																																				
2½	0	2	0	3																																						
2	0	2																																								

N. B. *This Table will do for the Valuing of Oak ſawn but of two Sides, or four Sides, if much waney.*

TABLE IV. *This Table ſhews the Value of one Foot in Length of Oak, or any other Timber, that is ſqu and cut to any Scantling or Size for Building, at the Rate of Two Shillings per Foot Cubical Meaſure.*

	2		2½		3		3½		4		+ ½		5		5½		6		6½		7		7½		8		8½		9		9½		10		10½		11		11½		
	d	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*d*	*q*	*q*	*d*	*d*	*q*	*d*	*q*	*d*	*q*	*d*
12	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	0	12	0	13	0	14	0	15	0	16	0	17	0	18	0	19	0	20	0	21	0	22	0	23	0	24
11½	3	3	4	2	5	3	6	2	7	2	8	2	9	2	10	2	11	2	12	1	13	1	14	1	15	1	16	1	17	1	18	1	19	0	20	0	21	0	22	0	
11	3	2	4	2	5	2	6	1	7	1	8	1	9	0	10	0	11	0	11	3	12	3	13	3	14	2	15	2	16	2	17	1	18	1	19	1	20	0			
10½	3	2	4	1	5	1	6	0	7	0	7	3	8	3	9	2	10	2	11	1	12	1	13	0	14	0	14	3	15	3	16	2	17	2	18	1					
10	3	1	4	0	5	0	5	3	6	2	7	2	8	1	9	0	10	0	10	3	11	2	12	2	13	1	14	0	15	0	15	3	16	2							
9½	3	0	3	3	4	3	5	2	6	1	7	0	7	3	8	2	9	2	10	1	11	0	11	3	12	2	13	1	14	1	15	0									
9	3	0	3	2	4	2	5	1	6	0	6	3	7	2	8	1	9	0	9	3	10	2	11	1	12	0	12	3	13	2											
8½	2	3	3	2	4	1	4	3	5	2	6	1	7	0	7	3	8	2	9	0	9	3	10	2	11	1	12	0													
8	2	2	3	1	4	0	4	2	5	1	6	0	6	2	7	1	8	0	8	2	9	1	10	0	10	2															
7½	2	2	3	0	3	3	4	1	5	0	5	2	6	1	6	3	7	2	8	0	8	3	9	1																	
7	2	1	2	3	3	2	4	0	4	2	5	1	5	3	6	1	7	0	7	2	8	0																			
6½	2	0	2	2	3	1	3	3	4	1	4	2	5	1	5	3	6	2	7	0																					
6	2	0	2	2	3	0	3	2	4	0	4	2	5	0	5	2	6	0																							
5½	1	3	2	1	2	3	3	1	3	2	4	0	4	2	5	0																									
5	1	2	2	0	2	2	2	3	3	1	3	3	4	0																											
4½	1	2	1	3	2	1	2	2	3	0	3	1																													
4	1	1	1	2	2	0	2	1	2	2																															
3½	1	0	1	1	1	3	2	0																																	
3	1	0	1	1	1	2																																			
2½	0	3	1	0																																					
2	0	2																																							

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N. B. *This Table will do for Oak ſawn all four Sides.*